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Watch & Clock

Journal of the National Association of Watch & Clock Collectors

Bulletin



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Guiding Core Purpose

To Encourage and Stimulate Interest in the Art and Science of Horology for the Benefit of the Public and NAWCC Members.

Long-Range Vision

To be the Global Leader in the Pursuit of the Art and Science of Time and Timekeeping.

Letter from the Editor—Therese Umerlik

Celebrating 2016 with eye to changes in 2017

Dear members, this issue we are celebrating the accomplishments of those who's artistry, craftsmanship, research, and prose have advanced the Association's commitment to horology and education. Their work has populated the *Watch & Clock Bulletin* for the past year with enriching perspectives and insights into horology. And the Pritchard Prize and Crafts Competition inspired members with creations of beauty and technical prowess. Also we have a new feature where Kate Van Riper, our archivist, presents her discoveries from the "vault."

We are presenting our varied advertising options, so members can learn about the many ways they can reach customers. See the breakdown in this issue of the *Mart & Highlights*.

About the Cover

During a five-year period, Michael R. Blayney (UK) created this table chronometer that earned him the People's Choice Award and first place in the Class 1 category titled Single-Train Clock Movements—Metal in the 2016 Crafts Competition at the National Convention in July in Louisville, KY. For more information about this entry and other submissions in the Competition, turn to page 495.

Errata

- The caption for the pocket watch on page 370 of the July/August 2016 issue misidentified the item Moses is holding. It is the Ten Commandments.
- Three clocks on page 397 in the September/October 2016 issue were misidentified. The top left clock is an Ansonia Clock Co. Antique Hanging model, circa 1900. The clock on the right is a Welch, Spring & Co. Regulator No. 1 model made in the 1970s. The third clock is an Eli Terry & Sons transitional. The auction was in May 2016.
- The Board Chair's message did not make it into the State of the Association in the September/October 2016 issue. The entire message is as follows:

In June 2015 NAWCC Board Members Mike Dempsey, Mary Ann Wahlner, and David W. Dunn completed their terms and were thanked for their service.

New four-year Board members were James Holloway, Richard Newman, and Carroll Wolfe. Ruth Overton stepped down as Chair after two terms. New officers elected were Chair Phil Gregory, Vice Chair Tom Bartels, Secretary Holloway, and Treasurer Newman.

The Board met June 15-16, 2015, at the National Convention in Chattanooga, TN, and November 17-19, 2015, in Columbia, PA. Conference call meetings were held in April, May, August, and October of 2015 and January and February of 2016.

National Conventions will be hosted in 2017 in Arlington, TX, and in 2018 in York, PA, for the Association's 75th anniversary. The Association continues to have more than 20 Regionals nationwide. The Board reaffirmed sending Board members as National representatives to Regionals.

The Ward Francillon Time Symposium titled "Music Boxes and Automaton" was held October 22-24, 2015, in Houston, TX. Upcoming Symposia will be the "Clocks at Winterthur," October 6-8, 2016, at the Winterthur Museum in Delaware, and "Horology in Art," October 26-28, 2017, at the Boston Museum of Fine Arts. Planning is underway for a 2019 Symposium in Nuremberg, GER.

The For All Time 75th Anniversary Endowment and Capital Campaign realized additional donations and planned gift estimates of \$165,517. The Partners in Time Annual Fund had gifts totaling \$60,861. The NAWCC also received a \$17,682 Commonwealth of Pennsylvania grant for the operation of the National Watch and Clock Museum in Columbia, PA, and a \$50,000 Crystal Trust grant for capital items. In total, the NAWCC raised \$359,604, excluding planned gift estimates.

The FY2016 operating budget had a \$4,934 surplus before depreciation and adjustment for investment gains and losses. The budget, approved in November 2015, projected a shortfall of up to \$56,948. The National staff was charged with reducing this shortfall and coming as close as possible to a balanced budget by March 31, 2016. Most membership fees also were increased by \$8. The budget restored the archivist position from part time to full time and added a part-time development coordinator for fundraising and grant writing.

The online versions contain the corrections. The *Watch & Clock Bulletin* regrets the errors.

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Official Notice

The full text of the approved minutes of NAWCC Board meetings may be found at:
<http://www.nawcc.org/index.php/our-association/bod-documents>.

Membership

Effective for new members on January 1, 2016, and effective for renewals on April 1, 2016

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Watch & Clock Bulletin

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Message from the Board Chair

Dear Members,

One of our fundraisers on which we depend is the Partners in Time Annual Appeal. I hope all of our members are aware that those who contribute each year to this appeal help pay a substantial part of our current expenses. We depend on the generosity of those members who donate to support our efforts to document and make available horological history and knowledge.

This generosity brings our passion for horology to the lives of thousands, whether a fellow member and friend or the public. If you have not previously contributed, information on the appeal is in the *Mart & Highlights*. I thank you in advance for your help.

Our recent educational courses geared toward professionals in related industries have been quite successful for our Education Department, with some courses even traveling internationally. These new courses have expanded our educational offerings to those who might not have otherwise been exposed to the expansive horological resources that our Association has to offer. In addition, the revenue generated has helped to pay for expenses not covered through membership dues.

IMTS Global Research conducted an independent survey of associations and membership organizations to uncover the latest trends in member engagement and operational performance. Growth was stagnant or actually declining for 41%—a troubling figure. These results were true regardless of the size of the organization—both large and mid-sized associations were feeling the same lack of growth or loss of members. This number is expected to rise as more baby boomers retire, and more competition and technology-based networks continue to emerge.

Membership organizations need to become innovative in how to approach new streams of revenue. The public educational programs in my metropolitan area draw hundreds of participants and furnish significant financial returns to the organizers. These programs are not related to the cultural charter of the sponsoring nonprofit but are done to make money. The revenue raised supports their mission when membership fees cannot provide sufficient revenue. For example, a symphony will sponsor a program on current political events with national speakers.

Our Association may have to consider revenue-producing events to cover our expenses. I welcome your thoughts on fundraising and revenue production, as well as approaches to attract new members. Letters or emails are better than phone calls. Thank you for your support.

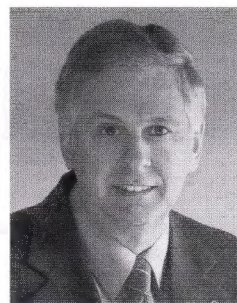
Philip C. Gregory

NAWCC Board of Directors Chair
pgregory@flash.net



Message from the Executive Director

Dear Members,



Each October we embark on a fundraising appeal to our members and friends titled the Partners in Time Annual Appeal (formerly the Partners in Time Annual Fund). The purpose is to solicit support for the ongoing operations of the NAWCC. Donations are typically given to the area of greatest need

or directed to the National Watch and Clock Museum, the Library and Research Center, or education programs. This appeal runs to the end of our fiscal year on March 31. Gifts typically range from \$25 to \$1,000. Last year \$61,143 was donated.

Contributions can be designated for specific programs or projects, such as the restoration of the Ansonia street clock, Library or Museum acquisition funds, or sponsorship of a changing exhibit. A listing can be found by clicking on the Giving tab on the home page of nawcc.org and going to the Timely Needs Catalog. These needs are often funded by Chapters, by memorial and honor gifts, or by individuals or groups interested in a specific project.

We have undertaken a \$7.5 million campaign, which will continue through our 75th anniversary in 2018. The For All Time 75th Anniversary Endowment and Capital Campaign's purpose is to raise \$5.5 million for endowments that will increase and continually produce income in support of the Museum, Library, education programs, and other operational needs. In addition \$2 million is for capital expenses to upgrade and modernize our 20-year-old facilities. Most gifts to the campaign are through multiyear pledges and planned gifts. To date, we have received multiyear pledges for gifts of \$150,000, \$100,000, and other gifts. Our largest planned gift is designated in a bequest and is estimated at \$700,000. More than \$2.5 million has been raised thus far.

We ask that members and friends first support the Annual Appeal, because it helps with the NAWCC's current needs and, if your finances allow, support the campaign and specific projects.

The NAWCC is a qualified charitable organization under the following IRS definition: "To be tax-exempt under section 501(c)(3) of the Internal Revenue Code, an organization must be organized and operated exclusively for exempt purposes set forth in section 501(c)(3), and none of its earnings may inure to any private shareholder or individual." Because of this, contributions and the majority of membership fees are tax deductible for US members who itemize. This also means that most of our expenditures must be in support of our charitable mission.

J. Steven Humphrey

NAWCC Executive Director
shumphrey@nawcc.org

Vox Temporis—Letters to the Editor

The views expressed are those of individual members and are not necessarily endorsed by the NAWCC. Letters may be edited at the discretion of the editor. Contributions may be directed to Editor Therese Umerlik, at tumerlik@nawcc.org or mailed to NAWCC, Inc., Publications Department, 514 Poplar St., Columbia, PA 17512-2130.

Car Clocks in Their Dashboards

Tacoma, WA, has two major car museums: America's Car Museum and the LeMay Family Collection. Both originated from the collecting passion of Harold E. "Lucky" LeMay (1919-2000), who was recorded in 1998 in the *Guinness Book of World Records* for "Largest Antique & Vintage Vehicle Collection."

While the reasons for the split into two major museums are controversial, it created a double opportunity to view hundreds and hundreds of classic motorized vehicles in downtown Tacoma and on the city's outskirts. I was invited to speak at the Pacific Northwest Regional in Tacoma in May, and I was encouraged to visit these museums if I had extra time. I did, and I did.

Many horology collectors also admire classic cars and sometimes collect them. My interest in cars began as a teenager, and although nothing exciting is in my garage these days, as a younger man I owned cars made by MG, Austin Healey, Jaguar, Mercedes, and Alfa Romeo. While most of the cars in the two museums are American-made, some foreign marques are represented there, too.

I first visited America's Car Museum. As I entered the modern multilevel building, I made it my mission to seek out and photograph as many car clocks as possible. I realized that, although we in the NAWCC regularly see old car clocks at auctions and at marts, we rarely see them where they originated—in dashboards where they were an integral part of the car's interior designs viewed by every driver. In two articles on the subject—Mel Kaye's "The Most Wonderful Automobile Parts," *NAWCC Bulletin*, No. 337 (April 2002): 167-176 and Ray Brown's "Time Travelers: A History of Electric Clocks for the American Automobile," *Watch & Clock Bulletin*, No. 416 (July/August 2015): 307-322—we may view many clock examples, but only one in place.

During my hours at that museum, I spent time in its library with Debbie Kray, education manager, who told me that nobody else had ever asked about car clocks, and there was nothing specifically about them in the library. We looked in many books, including owner's and repair manuals, but found very little of relevance. She is interested now, she has the *Bulletin* references, and she has ordered a copy of *Dashboards*, a 1994 picture book by David Holland, which I bought via Amazon after returning home, and recommended.



The next day, I drove to the second museum on the 100-acre grounds of the former Marymount Military Academy. Far less fancy and far more crowded with cars in large outbuildings, this facility has ongoing LeMay family involvement. I requested a guide who could help with my mission and was grateful for a volunteer who opened doors and allowed me to slide in for better camera angles. He, too, said I was the first with a car clock focus.

These photos are a sampling of the many I captured. I confess that these high-style and old high-tech dashboards are as appealing to me as timepieces with Willard and Howard on their dials.

For more information about the museums, please visit www.americascarmuseum.org and www.lemaymarymount.org.

—Bob Frishman, FNAWCC (MA)



Content in *The Watch Dial* Questioned

David Read (UK) sent this letter regarding two short articles from *The Watch Dial* that ran on pages 160 and 178 of the March/April 2016 issue of the *Watch & Clock Bulletin*:

The first of these ['The First Watches'] is misleading in that it implies that around 1511 Peter Hele invented the watch that could be carried in the pocket or worn elsewhere on the person. However, the portable clock and then the watch was not itself an invention. It was a development made possible by the invention of the mainspring, and there is no doubt that this invention had made its appearance in Flanders, France, and Italy well before 1511.

As explained by David Landes in his landmark book *Revolution in Time: Clocks and the Making of the Modern World* [Cambridge, MA: Belknap Press, 1983], there is no historical evidence to support the idea that a single person [Peter Henlein alias Hele] invented the first portable timekeeper small enough to be carried on the person. The pocket watch was not an invention but the result of progress in miniaturization that took place in several centers more or less at the same time.

Secondly, and with respect to the famous astronomical clock in Prague, the story of its maker [incorrectly credited to Hanusch] having been blinded so that he could not make another is a myth; as is the tale that he then destroyed the clock so it could no longer be used. The correct account of this clock is given in www.prague.cz/astronomical-clock.

—David Read (UK)

From Slot Car Racing to Pocket Watches: Member Finds His Way to the NAWCC

As a child I had a slot car racing set, 1/32 scale, that was fun racing, but I always thought it would be more fun to have trains involved somehow. As I grew up, many other things caught my interest. Later in life, I discovered that HO scale slot car racing was very compatible with HO scale electric trains. I created a layout that had several railroad crossings of the car racetrack. It was even more fun now to race and beat the train. Crashes were inevitable.

One day while shopping at a local retailer, I came across a pocket watch with a locomotive on it. I couldn't buy it fast enough. I was so proud of my find that I told my older brother. Some days later he showed up and laid a pocket watch in my hand. The dial said "Illinois" but he had no idea if it worked and said he'd had it a long time. I wound it and it ran but we didn't know how to set the time. We had no idea even how to open it. My brother did note that our paternal grandfather ran the railroad in New Jersey, where we were from. I wondered if there were any books relating to pocket

watches. A few days later he brought me *The Complete Guide to Watches* from a local library.

I leafed to the Illinois section of *The Guide* but still had no clue. In the back section of *The Guide* was a name and address of Richard Hanewald in Franklin, PA. Franklin is about 14 miles from my house. I wrote to Hanewald telling him about the pocket watch. Several days passed when Hanewald called. He offered to help and we agreed to meet.

I was impressed with Hanewald's generosity and pleasant manner; after all I was a complete stranger. He took my pocket watch and within a few seconds he opened it, adjusted the time, and closed it.

Wait! What did you do?

He was very patient and showed me exactly what to do. He explained that this pocket watch was indeed a railroad grade, pendant-wind, lever-set, double-sunk watch. He showed me the serial number and how to do research in *The Guide*. He said he does repair work on most watches, and he would help me with anything in the future. He also told me about the National Association of Watch and Clock Collectors, Inc. Our meeting ended and I couldn't have been more impressed and enthused.

Over the past year Hanewald and I have met many times. I've showed him some of my purchases. I have bought junk but I have bought well too and each time we meet I learn so much more. Hanewald has repaired several of my watches, and I now have over 35 quality, running pocket watches of various American manufacturers and several Swiss pocket watches.

I have restored two old dome top steamer trunks, an old oak machinist's tool chest and a turn-of-the-century oak piano stool. I appreciate the history of things, and adding pocket watches to my effort to preserve the past is just a bonus. These watches are a work of art, a signature of the maker.

True craftsmanship is rapidly disappearing from America. The areas of my search are limited to antiques stores, estate sales, flea markets, and auctions in my West Central Pennsylvania area, but my "territory" will be expanding. I am proud to have recently joined the NAWCC.

With Hanewald's patient tutelage, I anticipate my collection will grow. Thanks, Mr. H!

—Edward A. Britton (PA)

More on the 30-hour Box Clock Donated to the Connecticut Historical Society

The September/October 2016 issue of the *Watch & Clock Bulletin* featured a submission in *Horologica* titled "Clock and Papers at the Connecticut Historical Society" on page 430. The clock in Figure 2 of that submission was described in the text as a "30-hour box clock, made around 1814, . . . believed to be a Terry patent model."

That is indeed true and I can add a bit more to the story.

This Terry clock was donated to CHS in the early 1980s by Marjory (Lincoln) Winton (1892-1984), the widow of Lewis Bennett Winton (1893-1976) of New Haven, CT, and later Bridgeport and Greenwich, CT. Lewis Winton was a very early clock collector who acquired some fine clocks and hundreds of unused wooden clock gears, the latter from the Seth Thomas factory.

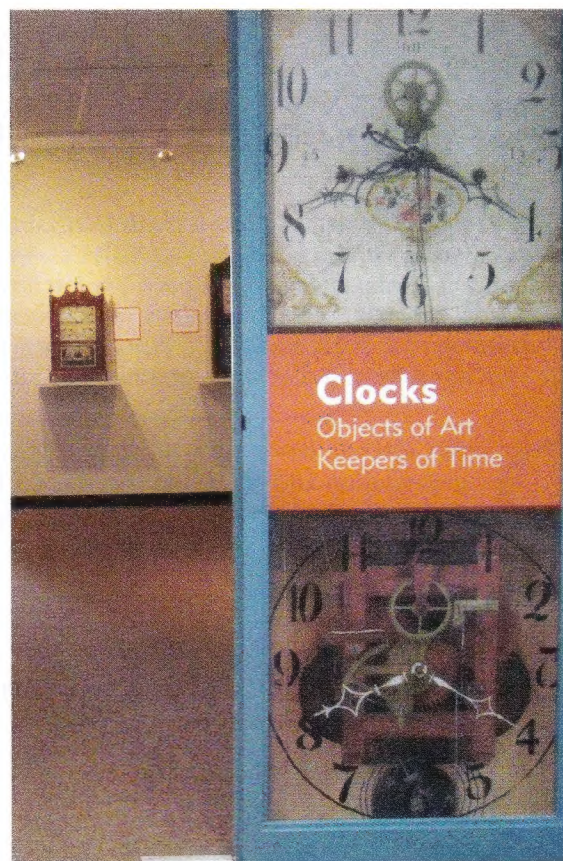
My association with the Winton collection goes back over 45 years when I was the curator of the American Clock & Watch Museum at Bristol, CT. Herschel B. Burt, clock dealer and owner of Burt Dial Co., asked me to shop at Exeter, NH, to see some of the Winton collection and determine if the museum had an interest. At the time Marjory was nearing 80 years of age and wanted to find a good home for her husband's collection. AC&WM was very much interested, but a problem later surfaced of which I had been unaware. Some years before I began at the AC&WM in 1972, Lewis had donated a large collection of clock photographs and negatives to the museum. Its first curator, Reginald Morrell, had not acknowledged the gift, at least to Lewis's satisfaction, and he disassociated himself from the museum. Because of that incident, Marjory would not consider the AC&WM as a recipient of the collection. Fortunately, the collection did go to the Connecticut Historical Society, which has been its caretaker for many years.

This Terry box clock is Eli Terry's patent model of his earliest shelf clock and is exactly as described in Terry's original patent, which is now in the archives of the AC&WM. No other patent model is known. Although there are a few known box clocks, usually marketed by Seth Thomas, the production had some design changes and they are not an exact copy of the patent model.

I traced the whereabouts of Terry's patent model in records from the time of Terry's death until the present. It was one of three clocks listed in Eli Terry's estate inventory after his death in 1852. These three clocks included the original clock (the patent model), a gravity escapement precision regulator, and another more common wooden movement shelf clock. These clocks passed to Eli's son Silas Burnham Terry (1807-1876). After Silas's death, these clocks were listed in his estate inventory. The 1876 inventory listed this clock as "short clock [original]" and was valued at only \$3. The precision regulator passed to Silas's son, Silas Burnham Terry Jr. (1837-1914) and is still owned by his descendants. The whereabouts of the third clock are unknown.

However, the original box clock passed to Silas B. Terry's son, Cornelius Elam Terry (1844-1912). In the Boston Clock Club papers, club member, Charles I. Allen of Terryville, CT, and a Terry clock collector, produced three letters Cornelius wrote to Allen's father, Rollin H. D. Allen (1821-1893). One of these letters stated:

The first clock or model that was devised and made by Terry in 1814 which is in a good state of



This close-up of the exhibit entrance sign features print enlargements of the box clock movement and a painted wood dial with outside escapement. This photograph was taken in April 2016 at the Connecticut Historical Society in Hartford, CT.

preservation and now owned by me . . . I have no idea that grandfather Terry ever made any Clocks like the model I have for the market but that this model was simply made to demonstrate how little space that the invention would take and how it would perform.

In 1895 Plymouth, incorporated in 1795, had its 100th anniversary. A centennial celebration was held in May and included an exhibition of early relics made or owned at Plymouth. Cornelius exhibited the above-mentioned original shelf clock. A photograph of several clocks exhibited at that celebration is on page 202 of Frank Atwater's *History of the Town of Plymouth, Connecticut, with an Account of the Centennial Celebration May 14 and 15, 1895* (Meriden, CT: Journal Pub. Co., 1895). Cornelius's clock is shown sitting on a wall shelf.

Prior to his death in 1912, Cornelius passed this clock to his son, Wallace Burnham Terry (1871-1911). In 1915, Wallace's widow, Eva Marcella (Clark) Terry (1868-1959) consigned the clock to a New Haven antique dealer from whom Lewis purchased it. The clock remained in Lewis's possession 61 years until his death.

—Chris H. Bailey (FL)

2016 Pritchard Prize

RESTORATION OF A BREITLING LAEDERICH WATCH

Editor's note: This year's winner is Denis Carignan, who had been an NAWCC member for more than 15 years, and his submission is featured below. He and NAWCC members Doug Shuman (IL) and George A. Meyer (CA) competed for this prestigious award and its \$1,500 prize. The last time this award was given was in 2013.

The competition was open to members and nonmembers who documented and completed a restoration or repair project between April 1, 2012, and April 1, 2016. For more information on the award, click on the Member tab at nawcc.org, go to Members Area, and click on Recognition—Awards.

Denis Carignan restored an 18-karat, gold-cased, key-wind, key-set lever watch with Breguet temperature compensation and parachute jewelings on the balance wheel, circa 1840. Figures 1-3 show the watch before any restoration work was started. Figure 4 provides an overview of the movement before the restoration began.



Figure 1. Dial of the Breitling Laederich watch before it was restored.

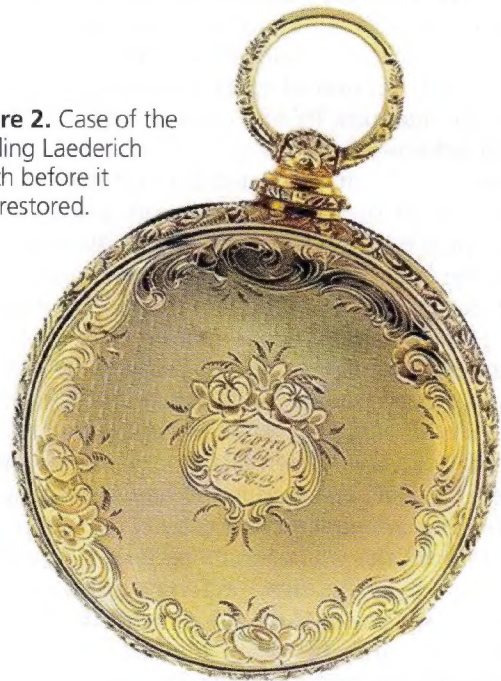


Figure 2. Case of the Breitling Laederich watch before it was restored.



Figure 3. Cuvette of watch before it was restored.



Figure 4. Overview of movement before it was restored.

Case of the Broken Regulator

In his submission, Carignan stated:

The regulator was broken [Figure 5] and a piece was missing. When I studied the piece that was left, I realized it had been cut at the loop that goes around the jewel setting, and as a result it must have [been] broken in half and was lost [Figure 6].

The balance staff had been re-pivoted [poorly], but due to the other problems with the watch, I saved making a new staff for last if I had time. The balance ran fairly true, so I decided to concentrate on the bigger issues. For cost versus resale value, the customer wanted me to spend time on aesthetics and the overall function rather than the staff or great accuracy.

The balance had very excessive end shake, even though someone had shimmed the back of the cock with paper and scratched the plate badly in doing so [Figure 7]. I found that the forward part of the underside of the cock was peened in from the sides to cause the balance to prop up and increase the end shake. Apparently the previous workman missed this. The balance cock was also bent, so it was not parallel with the plate [Figures 8A and 8B]. The hole and cap jewels are suspended in the parachute; the bottom of the parachute was hitting the looped part of the regulator. Because of this, a previous workman tried first to grind down the loop to decrease end shake and eventually must have decided to cut the loop in order to get the parachute to drop down and decrease the end shake more, resulting in the regulator being broken.

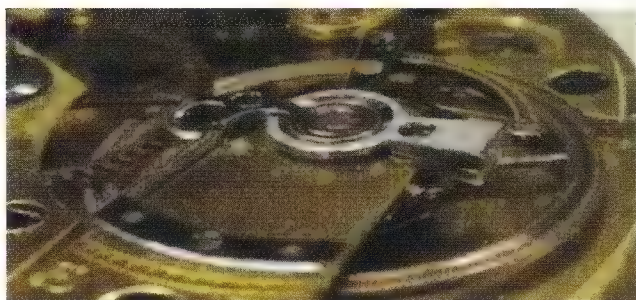


Figure 5. Broken regulator.



Figure 6. Pieces of regulator.

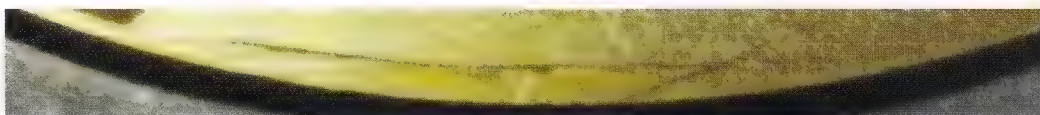


Figure 7. Deep scratches in plate from shim paper being cut against movement.

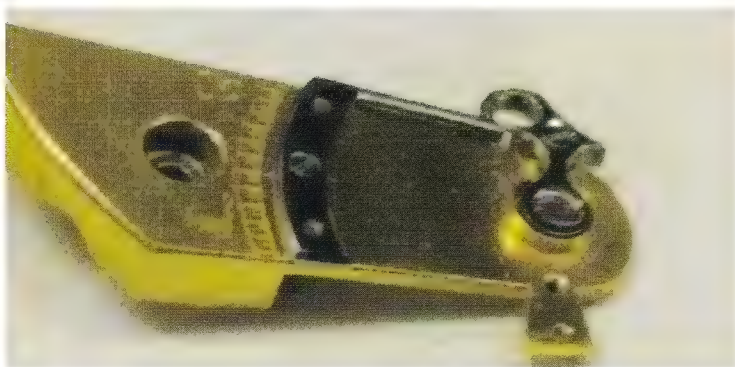


Figure 8A. Dented balance cock.



Figure 8B. Dented balance cock.

Repairing the Damaged Cock

In his submission, Carignan stated:

Naturally, the first thing I did to correct the end shake and repair the damage was to remove the paper shim [Figure 9]. Then I filed to foot of the cock true and flat where it had been damaged. This, in combination with bending the overhang to level it, made the cock parallel with the plate [Figures 10A and 10B].

I straightened the parachute and repaired the flange that holds the regulator. It was crushed in. I suppose this was done to try to hold the parachute tight against the regulator. I think it could have been when the balance was re-pivoted. It must have been a little long and instead of shortening the pivot the cock was peened on the underside to lift it up. It was in pretty bad shape. There were deep scratches in the plate that were made as a result of someone cutting the paper shim against the plate. I repaired them and I blended the finish.

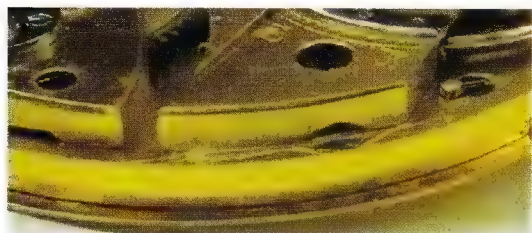


Figure 9. Shimmed balance cock.

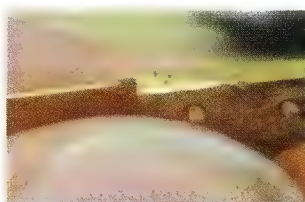


Figure 10A. Dented balance cock.



Figure 10B. Dented balance cock.

Making the Regulator

In his submission, Carignan wrote:

Recreating the regulator surprisingly was a little more difficult than I had anticipated but in the end it came out pretty well. I drew up a quick print of it, wrote out the program, and made it on a HAAS mill. Obviously, there was a lot of finish work to do. I made one that came out [beautifully] but it got damaged during heat treatment and I had to start over [Figure 11]. The second one came out [nicely], not absolutely perfect but nice nonetheless [Figure 12]. Normally, I would have made it all by hand. The CNC stuff slowed me down, because I am just learning how to program and operate them. I am happy with the finished part; it fits perfectly and works very well [Figures 13 and 14].

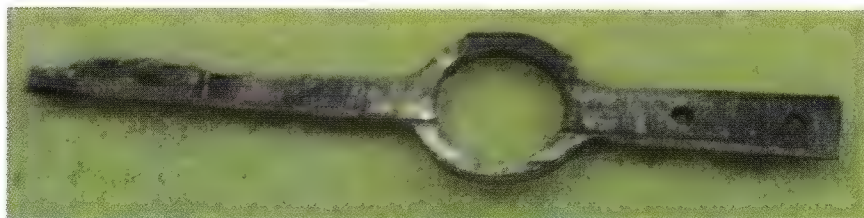


Figure 11. First attempt at making a regulator that was damaged during heat treatment.



Figure 12. Second attempt at making a regulator that was successful. The regulator is placed next to penny to indicate its size.

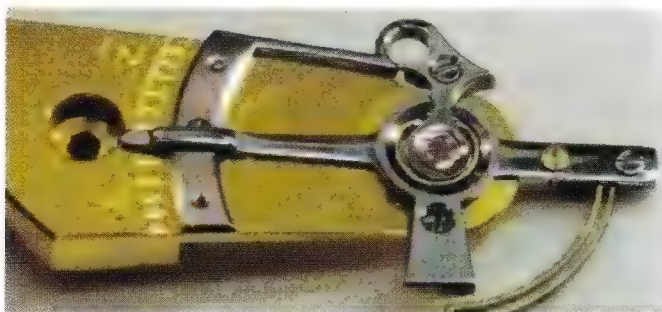


Figure 13. Regulator fitted to the balance cock.



Figure 14. Regulator and balance cock fitted to balance wheel.

The remainder of this article is presented as a photo essay where Carignan shows the work he accomplished and the challenges he faced.

Plates, Wheels, and Bridges Mainspring and Barrel



Figures 15A and 15B. For the main plate, I blended the scratches and hand-cleaned it after normal cleaning in a cleaning machine. In addition to blending the scratches and hand-cleaning the bridges after normal cleaning in the cleaning machine, I repaired other minor damages to them. I polished and trued the pivots, wheels, and pinions. These photographs provide different angles.

"I would like to say that this watch was an interesting project. I enjoyed the time I spent on it. There are several other issues that could have been corrected if time and money allowed but unfortunately both ran out. I repaired the biggest issues."—Denis Carignan in his submission.

Dial and Hands



Figure 16. The mainspring was “stacked” and dirty. I cleaned it, leveled it, and re-lubed it.



Figure 17. I removed the deepest scratches and hand-cleaned the barrel after normal cleaning. In the past a screw had been filed down, because it must have been protruding through, resulting in deep gouges inside the barrel.

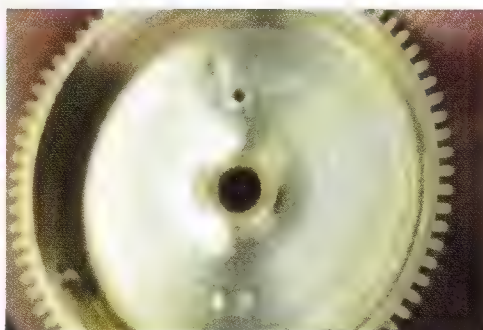


Figure 18. The barrel is still a little loose on the arbor but I ran out of time.

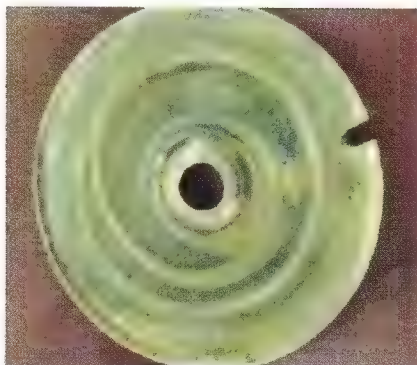


Figure 19. I removed the scratches and cleaned the barrel cover.



Figure 20. Restored barrel cover.



Figure 21. I fitted new stopworks complete, including the screw, and applied the matching finish.

Watchcase



Figure 22. The dial was tarnished and had many small scratches. I cleaned the dial, removed the scratches, and blended the finish.

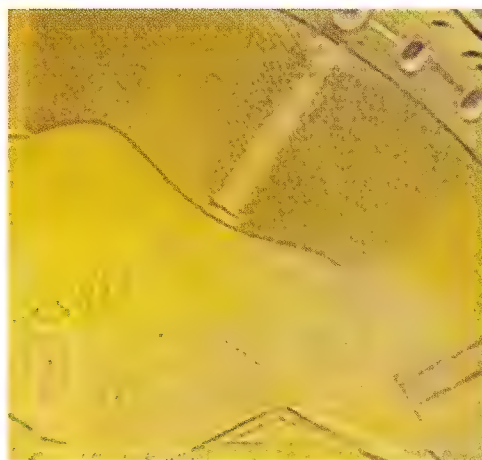


Figure 23. Close-up of scratch on dial.



Figure 24. The hands were broken and mismatched. I fitted a set of blued hands per customer request and polished the second hand.



Figure 25. Restored dial and hands.



Figure 26. Restored dial and hands.

Figure 27. The case back had small dents. I removed them as much as I could safely.



Figure 28. The cuvette had a large and fairly deep ripple. I removed it as much as I could safely. The cuvette has beautiful enamel in the lettering. It is very fragile, so I only worked out the dent lightly.



Figure 29. Close-up of restored cuvette.

2016 CRAFTS COMPETITION

by James "Jay" Holloway (TX)

The turnout for the 2016 National Convention in July in Louisville, KY, was outstanding. Among the successes that made this convention great was the excellent display of items in the National Crafts Competition.

First, the Crafts Committee thanks the many entrants who came from the United Kingdom, Italy, Canada, and the United States. This was the first year the competition had representation from multiple countries; the Committee hopes this begins a trend for a more international flavor.

Next, the members of the Crafts Committee deserve thanks for their work in putting on the Competition. They helped check in the entrants, made sure they filled out the insurance forms, and placed their items in the room. They also helped the visitors to see and vote for their favorite entrant and assisted with the tabulation of the judging and the display of the winners with ribbons and medals. The members are Chair James "Jay" Holloway, Vice Chair William Slough, Lee

Davis, Hugh Slough, Teresa Downs, and Kim St Dennis. Special thanks go to Davis who held a program on stenciling on glass.

The third group the Crafts Committee wishes to recognize are the judges who gave their time at the show to help at the Competition. Thanks go to Dave Fornof, Joel Warren, George Orr, Andrew Dervan, Hugh Overton, Al Dodson, Phil Johansen, John Acker, Maryellen Bell, and Gary Sertech.

Entries were submitted for 18 of the 27 classes, offering a wide range of items. The Crafts Committee wants to thank each person for their work and effort to bring their items to the Competition.

The entry form and rules for the 2017 National Crafts Competition are in the November/December 2016 issue of the *Mart & Highlights* and at nawcc.org.

Editor's note: The information with the entries on pages 496-509 came from the submitted entry forms and additional information from submitters.

WINNERS LIST

People's Choice Award—Mike Blayney (UK) Table Chronometer

Class 1: Single-Train Clock Movement—Metal

1st Place: *Mike Blayney (UK)*
2nd Place: *Russ Youngs (TN)*
*Alessandro Rigotto (ITA)*¹

Class 3: Clock Movements—Wood

1st Place: *Jim Borden (IA)*²

Class 5: Experimental Timepiece Design

Alessandro Rigotto (ITA)

Class 6: Wood Clock Cases—Solid or Veneered

1st Place: *James Chandler (NC)*
2nd Place: *Michael Schad (MO)*
3rd Place: *Eric Ryback (MO)*

Class 7: Other Material Clock Cases

1st and 2nd Places: *Randall Zadar (OH)*

Class 9: Watch Cases—Any Material

1st and 2nd Places: *Randall Zadar (OH)*

Class 10: Watch Restoration

1st Place: *Dave Cooper (CO)*

Class 12: Clock Restoration

1st Place: *James Willman (MO)*
2nd Place: *Eric Ryback (MO)*
3rd Place: *Edward Bikowitz (MI)*

Class 13: Painted Dials

1st and 2nd Places: *Randall Zadar (OH)*

Class 15: Reverse Painting on Glass—Litho Transfer

1st Place: *Patricia "Pat" Holloway (TX)*

Class 16: Reverse Painting on Glass—Stencil

1st Place: *Patricia "Pat" Holloway (TX)*

Class 20: Wood Carving

1st Place: *Michael Schad (MO)*

Class 22: Horological Parts—Junior Division

1st Place: *Jerit Vanderzwan (CAN)*

Class 23: Horological Tools—New or Reproduction

1st Place: *Bill Curley (CT)*

Class 24: Horological Novelties

1st Place: *Dulen Lee (TX)*

Class 25: Chapter Clock Restoration

1st Place: *Chapter 15 (TX)*
2nd Place: *Chapter 35 (KY)*

Class 26: Institutional and Public Clock Restoration

1st Place: *Chapter 35 (KY)*

Class 27: Exhibit Only

Lee Davis (PA)
David Lima (OH)
Patricia "Pat" Holloway (TX)
Jim Borden (IA)
Randall Zadar (OH)
James "Jay" Holloway (TX)

¹ His entries for Classes 1 and 5 did not make it through US Customs in time for the Competition.

² Jim Borden's wooden clock gained national attention when a visitor to the National Watch and Clock Museum in Columbia, PA, caused it to fall and be damaged. Curator Kim Jovinelli brought the clock to Borden at the National Crafts Competition where he fixed and displayed it. The Crafts Committee is proud to say that no one knocked it off the display wall during the Competition. Borden brought the clock home to Iowa for additional work and plans to return it to the Museum in the fall. A story featuring this clock can be found in the September/October 2016 issue of the *Watch & Clock Bulletin*.

People's Choice Award

Class 1, First Place: Single-Train Clock Movements—Metal

Michael R. Blayney (UK)

This table chronometer was made over a five-year period. Its movement consists of these characteristics:

- Traditional full-plate construction in brass and steel
- Fusee with maintaining power and 56-hour power reserve
- A 14,400 train with 15 jewels and beryllium-copper bushings to the fusee arbor and center wheel
- Free-sprung Invar 36 balance, with beryllium-copper timing weights and Hamilton elinvar helical hairspring
- Thermometer, the mechanism of which operates through a bimetallic spring acting through a rack and pinion system
- Earnshaw spring detent escapement with beryllium-copper passing spring and ruby locking stone. Unusually, the escapement is mounted on the top plate, primarily to allow inspection of the escapement, but also facilitate setup and adjustment.

The silvered and lacquered brass dial, engraved by Charles Scarr, has the following characteristics:

- Roman numerals
- Subseconds dial
- State of wind sector
- Thermometer sector

Its hands have the following characteristics:

- Blued steel hour, minute, and seconds hands, the latter of which was designed as a homage to a good friend
- Polished beryllium-copper state of wind and thermometer hands

Its case has the following features:

- Of gold-plated brass construction, the case design allows unobstructed inspection and appreciation of the movement, especially the Earnshaw chronometer escapement, not normally visible in a traditional gimballed marine chronometer.
- Within the center of the dial crystal can be found a hand-setting device utilizing a spring-loaded plunger. A purpose-made, hand-setting key may be inserted into the plunger, which on being depressed engages the cannon pinion, and then be rotated clockwise to set the time. Hand setting is thus possible without removing the bezel, thereby avoiding the damage to the dial and hands, and ingress of dust.
- The glazed base features a shielded winding aperture.
- The two-tier, brass-bound box is made of mahogany, and the plinth made of Victorian mahogany.

The chronometer is now on exhibition at the Worshipful Company of Clockmakers' Museum in the Science Museum in London.



**Class 1, Second Place:
Single-Train Clock Movement—Metal
Russ Youngs (TN)**

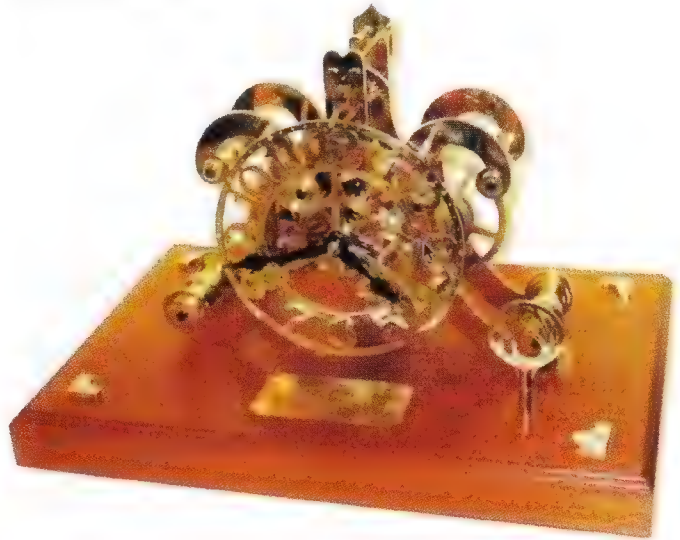
This clock was inspired by an 8-day spring-driven epicyclic train skeleton clock designed by W. R. Smith and patterned after one developed and built by William Strutt in the late 1820s.

This Strutt epicyclic train clock has planetary gearing with a sun and planet wheel and uses the Ferguson Mechanical Paradox, as opposed to the typical 12 to 1 motion works, for moving the hour hand. With the minute hand located on the center arbor, this permits individual setting of the minute and hour hands.

The center arbor is driven by a fusee great wheel assembly. The planet arm, consisting of a planet wheel and pinion at one end with a counterweight on the other, is fixed to the center arbor. The stationary sun wheel is fixed to the dial. The planet wheel pinion is engaged with the fixed sun wheel and hour wheel that is free to rotate on the center arbor. With the planet wheel pinion engaged and rotating around the sun wheel, the planet wheel is engaged with the internal teeth of the ring wheel, which causes the ring wheel to rotate on the

center arbor. The external teeth of the ring wheel are engaged with the escape wheel pinion. The recoil escapement drives the pendulum at 156 beats per minute.

Except for screws, the stranded fusee cable, main-spring, nameplate, cherry base, and dust cover, the entire clock was constructed from raw materials, such as brass plate and rod, drill rod, music wire, tool steel, and mild steel flat stock.



**Class 3, First Place:
Clock Movements—Wood
Jim Borden (IA)**

This is the smallest wall clock sculpture design that the entrant currently makes. It is less than 3 feet tall by 2-1/2 feet wide and is made of cherry and walnut. It is a 1-day weight-driven clock with a compound pendulum that beats 2.25 seconds. The pendulum motion has parts extending out to the edges of the clock and beyond in all four directions. The entrant designed the single-impulse escapement that consists of two levers; one simply locks the wheel in place while the other is attached to the pendulum and kind of floats down to catch a tooth as the first lever releases the wheel.



**Class 6, First Place:
Wood Clock Cases—Solid or Veneered
James Chandler (NC)**

This dwarf tallcase clock was inspired from a clock on display at Old Sturbridge Village in Sturbridge, MA, with the collection number 57.1.36. The original clock was made by Joshua Wilder circa 1820 in Hingham, MA. The following changes were made that distinguish the entrant's clock from the original design:

- The fretwork on the original seemed a bit too simple, so his clock has an example made slightly later by Reuben Tower and Abiel White.
- The width of the door on the hood is slightly narrower in his clock as inspired by an example made by Peter Cushing.
- The scrollwork on the base differs from the original and was influenced by a clock made by John Bailey Jr. and Henry Willard.

The majority of the work on the case was executed with hand tools similar to those that would have been used 200 years ago. The entrant completed the following work on his clock:

- All wood was milled from rough-cut, air-dried lumber, except the hood cover. The primary wood is walnut, figure maple, and cherry. The secondary wood is pecan, and the hood cover is walnut veneer.
- Quarter columns were turned by hand and then split.
- Hood columns were turned by hand.
- French feet were cut by hand.
- All moldings were made by hand using wood planes. The moldings were roughed out with a fillister and were finished with hollow and round wood planes. The arched section of molding on the hood was made with gouges.
- Fretwork and side windows were cut out by hand with a fretsaw.
- Miter joints were cut by hand and were finished with a miter plane and a shooting board.
- Cock bead molding around the door was made by hand with a router plane.
- Clock case was finished with orange shellac and wax.



**Class 6, Second Place:
Wood Clock Cases—Solid or Veneered
Michael Schad (MO)**

The design for this shelf clock was inspired by the heroic legend of St. George and his fight against the dragon. The dial was hand-painted and the case and carvings were made of cherry.



**Class 6, Third Place:
Wood Clock Cases—Solid or Veneered
Eric Ryback (MO)**

The design for this clock was inspired by a 1911 mahogany monument case made by Seth Thomas. The movement was restored.



Class 7, First Place:
Other Material Clock Cases
Randall Zadar (OH)

Standing at 2-1/2 inches tall, this bronze clock is called *Springtime*. The original handmade clock case and figurine were cast by using the lost-wax casting process. The clock and figurine were hand-sculpted from wax, molded, and then cast in foundry bronze. The clock is hand-painted in oils and includes a quartz movement.



Class 7, Second Place:
Other Material Clock Cases
Randall Zadar (OH)

Standing at 2-1/2 inches tall, this bronze clock is called *Wolfhounds*. The original handmade clock case and figurine were cast by using the lost-wax casting process. The clock and figurine were hand-sculpted from wax, molded, and then cast in foundry bronze. The clock is hand-painted in oils and includes a quartz movement.



Class 9, First Place:
Watchcases—Any Material
Randall Zadar (OH)

This bronze watchcase featuring a bird sculpture is called *Time Flies*. The original handmade watchcase and sculpture were cast by using the lost-wax casting process. The watchcase and sculpture were hand-sculpted from wax, molded, and then cast in foundry bronze. It was hand-finished and hand-polished and includes a quartz movement.



Class 9, Second Place:
Watchcases—Any Material
Randall Zadar (OH)

This bronze watchcase featuring a motorcycle sculpture is called *Low Rider*. The original handmade watchcase and sculpture were cast by using the lost-wax casting process. The watchcase and sculpture were sculpted from wax, molded, and then cast in foundry bronze. It was hand-finished and hand-polished and includes a quartz movement.



**Class 10, First Place:
Watch Restoration
Dave Cooper (CO)**

The nearly 20-hour restoration of this watch included the following work:

- Polishing the gold setting for the escape wheel
- Fitting the screw to the bridge
- Cleaning and polishing the locking jewel arm
- Grinding and polishing the new escape wheel locking jewel
- Making new detent threaded arbor
- Fitting the detent spring to the arbor
- Fitting the locking jewel art to the arbor
- Fitting numerous screws to the movement
- Making a new steel detent hairspring stud, passing spring, and banking pin for the detent
- Adjusting escapement
- Annealing 3rd wheel pinion
- Removing wheel
- Drilling and fitting a new arbor.



**Class 12, First Place:
Clock Restoration
James Willman (MO)**

This Hoffmann-Pollhans tower clock with skeleton tower was restored and is fully functional.



**Class 12, Second Place:
Clock Restoration
Eric Ryback (MO)**

This is a restored Seth Thomas No. 4 movement.



**Class 12, Third Place:
Clock Restoration
Edward Bikowitz (MI)**

This restoration was of an 8-day, strap brass, Birge & Fuller clock. Work on the pillars involved removing the gold paint, repairing the cracks in their veneers, and restoring them to their original condition. The movement was cleaned and repaired. The joints that were coming apart in the clock as well as the chips and bad veneer were repaired. The finish to the entire clock was restored.



**Class 13, First Place:
Painted Dials
Randall Zadar (OH)**

The original artwork on the dial titled *Autumn Colors* was hand-painted with oil paint and glaze



**Class 13, Second Place:
Painted Dials
Randall Zadar (OH)**

The original artwork on the dial titled *Earth and Sun* was hand-painted with oil paint and glaze.



**Class 15, first place:
Reverse Painting on Glass—
Litho Transfer
Patricia "Pat" Holloway (TX)**

This decorative picture is in the style of those used on clock tablets. This piece was created by applying a photocopy of a lithograph to the reverse of the glass. The excess paper was removed, and the remaining image was painted with artists' oils.



**Class 16, First Place:
Reverse Painting on Glass—Stencil
Patricia “Pat” Holloway (TX)**

This tablet was created from a Fenn pattern stencil using varnish, gold, and silver bronzing powders. After the stencil was applied, the reverse was painted with artists' oils.



**Class 20, First Place:
Wood Carving
Michael Schad (MO)**

The design for this shelf clock was inspired by the heroic legend of St. George and his fight against the dragon. The clock involves cherrywood and is covered with Plexiglass.



**Class 22, First Place:
Horological Parts—Junior Division
Jerrit Vanderzwan (CAN)**

This entry is a replica of a 10.4" figure of the Roman god Mercury. Based on an original ornament from an eighteenth-century Dutch tallcase clock, Mercury was a typical addition to tallcase clocks produced in the Netherlands, particularly during the Dutch golden age, to acknowledge the commercial acumen of their owners.

To create this piece, a multipart mold was created, and resin material was used to reflect the texture, weight, and feel of the original. The entrant primed and hand-painted the figure gold to match the finish of the original piece and then applied an antique finish by darkening it with black and brown pigments.



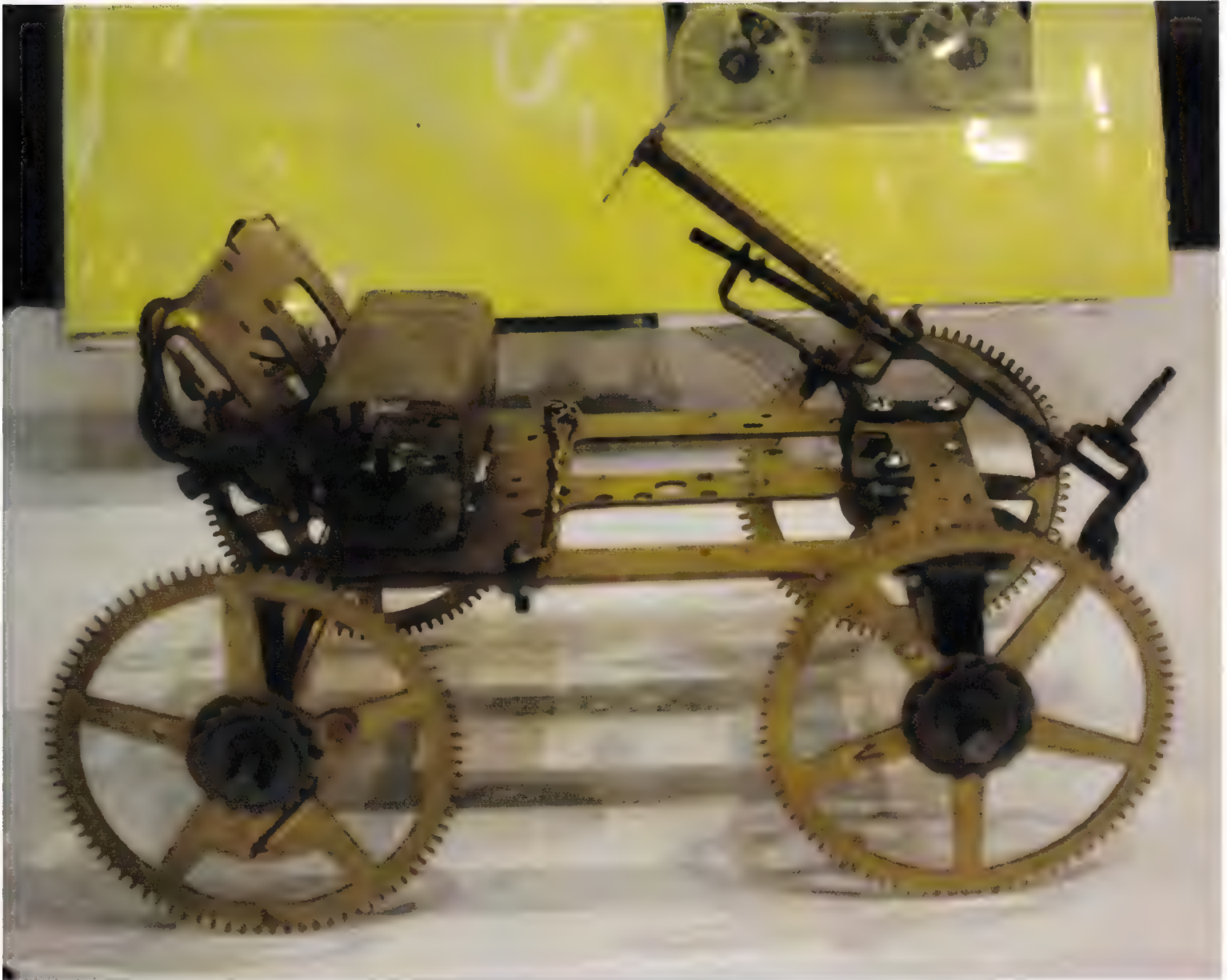
**Class 23, First Place:
Horological Tools—New or Reproduction
Bill Curley (CT)**

This vise mounted tool was made to form strip pallet anchors.



**Class 24, First Place:
Horological Novelties
Dulen Lee (TX)**

This entry consisted of parts from old American clock movements that were incomplete and beyond repair. Glue was not used.



**Class 25, First Place:
Chapter Clock
Restoration
Chapter 15 (TX)**

The entry is a Self Winding Clock Co. of New York, NY, wall regulator No. 10. The clock had been stored in a dirt basement in Brooklyn, NY, by an SWCC repairer who could not bear to destroy the clock when Western Union closed the business. A Chapter 15 member went to New York and purchased several clocks from the repairer's widow who wanted it to go to a good home.

The case showed 50-60 years of use and another 50 years of storage in a damp basement. The finish was gone from the wood case, and many glued joints had failed, resulting in the top falling off in pieces. Members cleaned the case with acetone to remove any dirt or grime while leaving the 100 years of patina on the wood. Members re-glued the broken joints, removed old nails, filled the holes, removed the glass, and cleaned it. All of the wood had multiple coats of shellac applied to restore the original sheen. The shellac had to be sanded down multiple times with a final rubdown with a wax coat.

The movement was disassembled and thoroughly cleaned. The pivots and pivot holes were polished to a high luster. Steel parts were buffed to remove all rust and then treated with a rust inhibitor. The electric contacts were cleaned and platinum was replaced where needed. The original wire was used when possible with new 3-volt batteries designed in the original style were used to power the clock. Six members of Chapter 15 helped to complete the project.



**Class 26, First Place:
Institutional and Public
Clock Restoration
Class 25, Second Place:
Chapter Clock Restoration
Chapter 35 (KY)**

This restoration project was an E.
Howard tower clock.



Part 29

Horology in Art

by Bob Frishman, FNAWCC (MA)

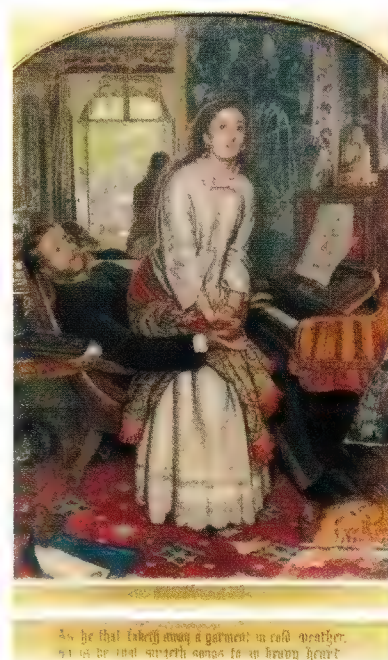
While at the Tate Britain art museum in London recently, I was excited to see *The Awakening Conscience*, an 1853 painting by William Holman Hunt (1827-1910). For many years, I have admired this Victorian painting, which was chosen by Loudon Wainwright III as the cover of his 1986 album *More Love Songs*.

Love is the theme of the painting, but specifically illicit love. This is a first and rare example by a pre-Raphael artist who tackled the thorny topic of kept women. Nearly all other contemporary portrayals of English ladies stressed their purity and high moral values, but Hunt wanted to represent a fallen woman's moment of redemption.

Hunt was not alone in attempting the reform of prostitutes, but his model, Annie Miller, was one with whom he was not successful. However, in this scene she heard the call, jumping from her unaware lover's lap to stare through a window at symbolic bright sunlight. The colorful oil-on-canvas overflowed with the following other symbols and messages: She had no wedding ring on her finger, she was in a Victorian state of undress, the couple had been singing "Oft in the Silly Night", and the sheet music on the floor was Edward Lear's adaptation of Tennyson's "Tears Idle Tears". A cat mangling a bird and a discarded soiled glove pointed to the mistress' precarious situation as a victim liable to be abandoned and forced by necessity into common streetwalking.

Hunt also adhered to the detail and thoroughness of his fellow artists. For the love-nest setting, he rented a newly furnished room at Woodbine Villa in St. John's Wood, a *maison de convenance* in a neighborhood where wealthy London men kept their mistresses. Hunt was inspired to create the painting "by reading the description of Peggotty's search for Little Emily in David Copperfield," according to Christopher Wood's book titled *Victorian Panorama: Paintings of Victorian Life* (London: Faber, 1976). This did not stop most critics, except John Ruskin, for condemning the work for illustrating a dark side of domestic life.

Hunt even designed the 34" x 42" ornate gold frame, which included marigolds signifying sorrow, bells for warning, and a star for spiritual revelation. Even bolder was the biblical quotation Hunt added at the bottom,



The Awakening Conscience by William Holman Hunt. This photograph was taken of the painting at the Tate Britain art gallery in London, England.

"As he that taketh away a garment in cold weather, so is he that singeth songs to an heavy heart". In my photograph of the painting, I include those words, which amplify his treatment of a suppressed feature of nineteenth-century Britain.

Of course, the French ormolu clock under its oval glass dome on the piano lid played a usual horological role. Here again the clock served as a reminder of mortality and the need for reforming one's life while time remained.

About the Author

Bob Frishman has repaired, restored, collected, sold, and researched antique timekeepers since 1980. His business, Bell-Time Clocks, is based in Andover, MA. He lectures regularly about the history, science, and culture of mechanical timekeeping and has authored many articles for the *Watch & Clock Bulletin*.

He is an NAWCC Fellow, chair of the Ward Franchillon Time Symposium Committee, and a freeman of the Worshipful Company of Clockmakers. He can be reached via www.bell-time.com.

The Common Consumer Watch and ...Football



Although neither elegant nor highly successful, Manhattan watches and the company that made them resided along the path to common consumer watches. While Waltham and Elgin produced millions of jeweled watches, those timepieces were priced well above a common consumer level. Among its germane features, Manhattan Watch Co. was closely connected to a clock company, and to clock manufacturing methods, accompanied by clever mechanical design that originally attracted me. However, unknown to me at the time of the original article was the character who functioned as one of the original salesmen in Manhattan's New York office. That was Walter Camp, fresh out of Yale, where he had just invented American football.

Camp had ties to Manhattan's companion clock company, New Haven Clock Co., and may actually have been its employee. Arthur Jennings, Manhattan founder, maintained his ties to New Haven Clock, such that he and Camp ultimately continued a working relationship throughout their long-lasting careers. And, while horological manufacturing and football seem a considerable distance apart, they turn out to be well matched to the Camp personality that traveled between them.

Reaching a consumer watch required innovating away from the design, manufacture, and distribution methods that had dominated the traditional watch market. Camp migrated from rugby's locomotive approach

to set-play strategies of football that required a similar innovative mindset, both in conceiving the game and selling that concept to governing bodies. While a gifted athlete, Camp was an analyzer, strategist, campaigner, and legislator. He managed a group of parallel careers throughout his life, by which he simultaneously became chief executive officer of New Haven Clock, a prolific top-selling author, and a continuing patriarch of the spread and governance of football, until his death. His driving traits were intellect, energy, and force of personality.

This article refers to an online addendum that clarifies the factors and progression to common consumer watches and summarizes Camp's careers. The consumer watch progression was somewhat obscured in the original two-part article by a wide array of detail regarding the watch, company, and people involved. Camp was missing altogether. While much of his biography is not directly related to horology, it is a fascinating adjunct amid the vast range of human enterprise. Such surprise discoveries are among the pleasures of research.

The article on Camp can be found in the June 2010 online issue as a link with the article I wrote titled "Manhattan Watch Company with Notes on the Knickerbocker Watch Co.—Part 2." The first part titled "Manhattan Watch Company—Part 1" was published in the April 2010 issue of the *Watch & Clock Bulletin*.

—Michael Harrold (MA)



Figure 1. Walter Camp in a Yale University athletics uniform, ca. 1878.

Characteristics of the 16-Size, 3/4-Plate 1905 Howard Movement

by Selman A. Berger (NY)

In 1903 when Keystone Watch Case Co. purchased the rights to E. Howard Co., Keystone initially contracted with Waltham Co. to produce 12-size and 16-size pocket watch movements with the Howard name. These were generally higher-grade movements: 17 jewels and 19 jewels for the 3/4 plate (Figure 1, left) and 21 jewels and 23 jewels for the bridge model configurations (Figure 1, right). Eventually, Howard used a variation of the Waltham 3/4-plate design in its Equity and Traveler movements for its 16-size 3/4-plate 1905 model. The American Watch Co. bridge model was the precursor to the Howard 16-size, 17-jewel to 23-jewel, bridge models first patented in 1908.

In 1905 Howard patented the 3/4-plate 16-size movement and produced three 17-jewel models that will be described in this article. The first serial number for the 1905 model was 854,001.¹ Most of these movements have serial numbers in the range of 854,000-994,000, although some have been seen in the range of 1,123,000-1,157,000.²

Series 2

This model was the highest grade produced in the 1905 series. In an early advertisement, serial number 870,262 is described as having a double roller escapement adjusted to three positions.³ It was characterized by its parallel line damaskeening in which each line is 1.8 mm to 2 mm apart, or 0.07" to 0.08". All upper plate jewels are in raised gold jewel settings held down by small plate screws. The crown and ratchet wheels are highly polished concave surfaces. The early models have the crown wheel held down by two screws and the hairspring stud held in place by a cap with two screws, while the click spring was capped with a half-moon shape. A circular pallet bridge also was used (Figure 2, left).

Later models used a single screw for the crown wheel, with the square hairspring stud held in by a side screw. The click was replaced by one with a circular design with a protruding finger that made contact with the ratchet wheel. The circular pallet bridge was replaced

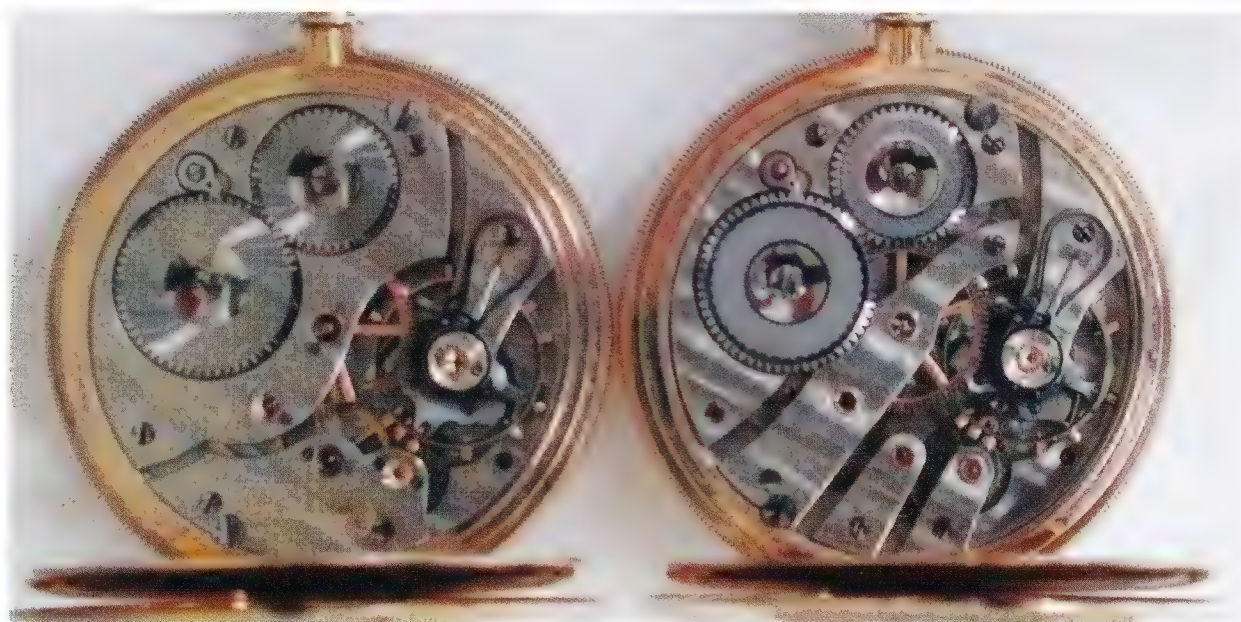


Figure 1. Waltham-Howard 19J S/N 866,621, left. Waltham-Howard 23J S/N 1,005,285.

Table 1. Position adjustment markings for Series 2 lever-set movements

Serial number	Adjusted (only)	Adjusted 5 positions
859,429	Yes	
913,012	Yes	
913,055	Yes	
913,127		Yes
913,340		Yes
913,468	Yes	
913,502		Yes (also marked No. 2)
913,506		Yes
913,644		Yes (also marked No. 2)
913,942	Yes	

by a T-shaped one (Figure 2, right). It was described as a “fine five-position adjusted movement.”⁴ The balance wheel has all gold meantime and balance weighting screws and a double roller escapement. As advertised, these movements were made in hunting and open-face configurations and were described as a pendant-set only in a Howard watches catalog (See Figure 7).⁵

However, I have examined ten open-face movements that are all lever set with 5 mm, or 0.2", wide parallel line damaskeening. Table 1 describes the position markings of these movements. Two samples are shown in Figure 3.

These models were used for railroad service, because they were lever set and adjusted to five positions, although they were not all necessarily marked as such. In addition, serial number 913,502 is marked “No. 2” near the crown wheel (Figure 3, right). In actuality, very few 1905, 3/4 plate models had a series marking. As well, the early Howard bridge models that were first patented in 1908 had no position markings either. Later 16-size bridge models were marked “Ser. X” or “No. X,” depending on the series or movement model.

Eventually, the 17-jewel, 3/4-plate models were discontinued and replaced by the 17-jewel to 23-jewel bridge models. The 3/4-plate, Series 2 was replaced by a 17-jewel bridge model—also called Series 2—where the pendant-set models were adjusted to three positions, while the lever-set models were adjusted to five positions, had either safety or going barrels, and were used for railroad service.

Series 3

The Series 3 movement was produced in hunting and open-face models and was only pendant set. Early models had a rayed style of damaskeening,⁶ but they were similar to Series 2 structurally because they both used a circular pallet bridge, a two-screw hairspring stud clamp, two screws holding the crown wheel, and a half-moon-shaped click spring cap.

Movement serial number 870,231⁷ is marked adjusted, but the description does not mention the number of adjustment positions. Later designs used the more common circular damaskeening, characterized with a

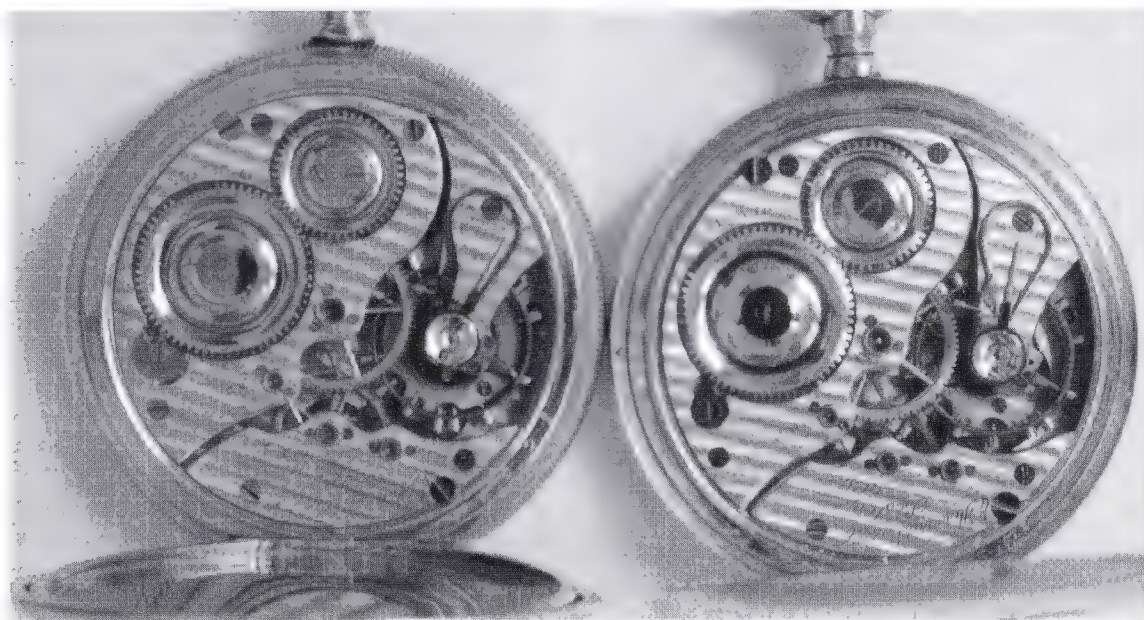


Figure 2. Series 2 S/N 858,430, left. Series 2 S/N 935,456. Both are pendant set with narrow parallel line damaskeening.

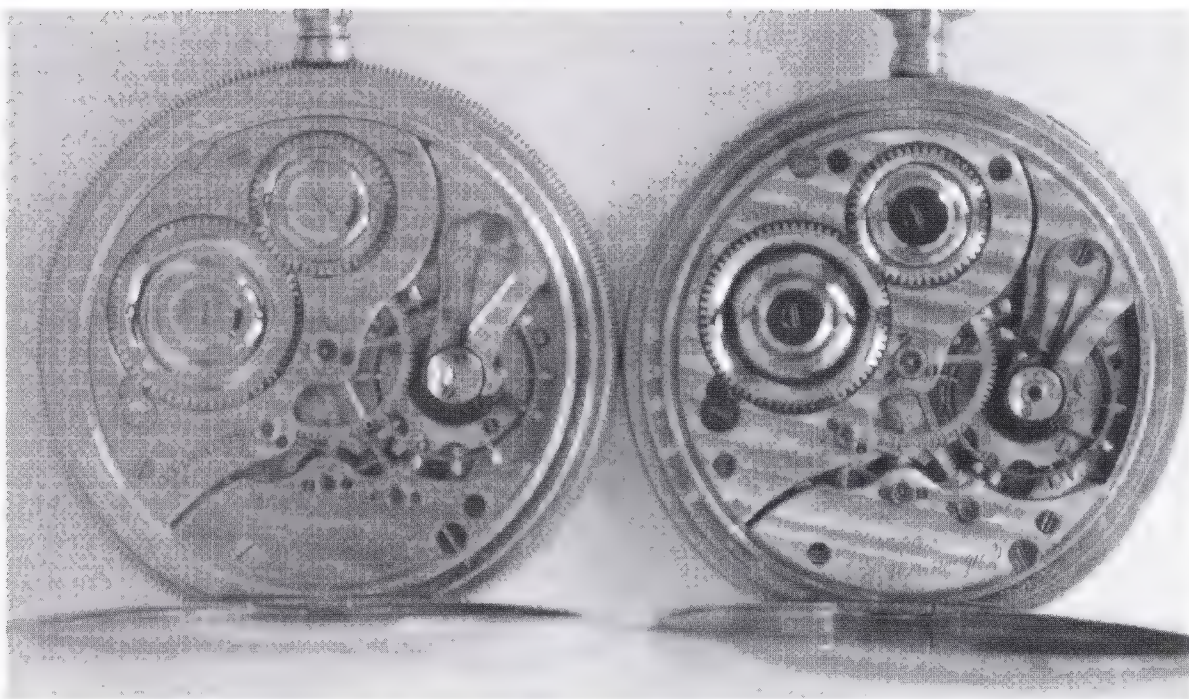


Figure 3. Series 2 S/N 913,012, left. Series 2 S/N 913,502. Both are lever set with wide parallel line damaskeening.

single roller escapement, adjusted to three positions, isochronism, and temperature, and only marked "adjusted."⁸ Only the center wheel jewel was set in a raised gold jewel setting; all the others were in flat gold jewel settings held down by two screws. The winding wheels were flat, and the weighting screws on the balance wheel were brass rather than gold that was used for the higher-grade models. The center wheel was pink gold plated. The open-face movement was discontinued, but the hunting model was retained.⁹ Eventually, the excess hunting models were sold to Alter Co., Chicago, IL, and marketed as Abbott Sure Time and sold as such. Figure 9 shows the advertising material describing the Series 3.

Series 4

Series 4, with checkerboard damaskeening, was the second highest grade of the 3/4-plate series and was produced in hunting and open-face designs. All of the hunting models were pendant set as were most of the open-face models; however, as advertised, some open-face models were lever set and could be used for railroad service.¹⁰ Figure 4 shows, at right, serial number 972,969 marked "adjusted 5 pos.," while at left serial number 983,127 is merely marked "Adjusted," while both are lever set. These models were adjusted to five positions and had a double roller escapement. In The Railroaders' Corner article,¹¹ there is a photograph of a 3/4-plate checkerboard model, serial number 982,400, marked No. 4 and adjusted to five positions. Figure 8 shows the advertising material for the Series 4.

Series 4 was short-lived and was the first 3/4-plate model to be discontinued. In advertising material as of 1911,¹² Series 4 was no longer listed but was replaced by Series 9, which had the same checkerboard damaskeening but was downgraded and adjusted to three posi-

Table 2. Position markings for Series 4 lever-set movements

Serial number	Adjusted (only)	Adjusted 5 positions
972,969		Yes
974,867	Yes	
978,073	Yes	
978,119	Yes	
978,287	Yes	
978,582	Yes	
982,274	Yes	
982,528		Yes (also marked No. 4) ^a
982,585	Yes	
983,127	Yes	
983,243	Yes ^b	
985,683	Yes	

^aThis information refers to an eBay photograph.

^bThe original license specifies "Adj. Temp. Isochronism, 5 positions." See Figure 5.

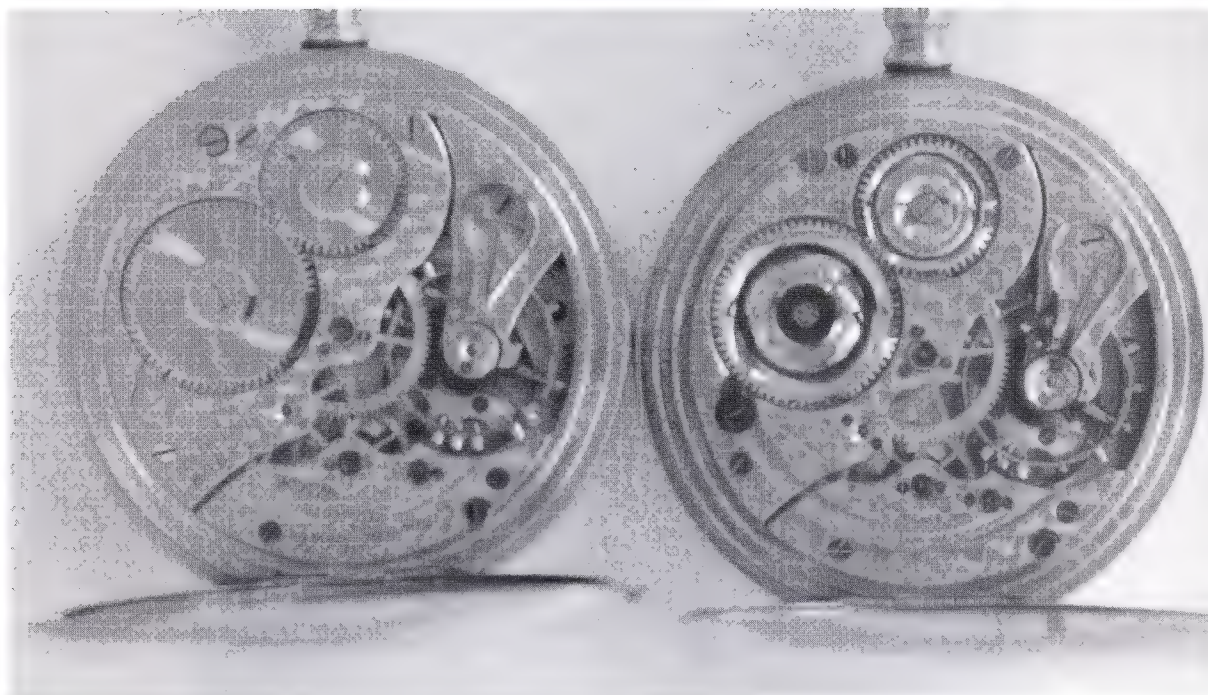


Figure 4. Series 4 S/N 972,969, left. Series 4 S/N 983,127. Both are lever set with checkerboard damaskeening.

tions and pendant set. Table 2 summarizes the position markings for ten lever-set movements.

From Table 2 it is clear that a five-position marking may not always be present on the movement, but if it is lever set, it would meet railroad standards.¹³

Series 9

As just discussed, Series 4 was downgraded and adjusted to three positions. The checkerboard damaskeening was retained for this model and was produced in pendant-set hunting and open-face models. The escapement was still double roller, but the balance wheel now had brass balance weighting screws but still retained the gold meantime screws. All the upper plate jewels were in flat gold jewel settings except for the center wheel jewel, which was in a raised setting. Early Series 9 movements had a rivet double roller staff and a raised gold jewel setting for the upper balance cap jewel, whereas later models had a domed cap jewel held by two screws under the bridge and a friction fit double roller balance staff.

Because the Series 4 and 9 movements are not marked with a series number, it is difficult to distinguish between them, except for the lever-set Series 4, which were observed to have both gold meantime and balance weighting screws. While no pendant set Series 4s were examined, it would be logical to assume that they would have all gold screws because it is a five-position adjusted movement. The observed Series 9 balance wheels have brass weighting screws but gold meantime screws.

In common use, many citations refer to the “checkerboard” model as Series 9 without realizing that Series 4, which was of a higher grade, did exist. A careful examination of the balance wheel weighting screws is an important distinguishing factor, because there are no other distinguishing markings. The last lever-set checkerboard model observed has serial number 991,445.¹⁴ The higher the serial number the more likely it is Series, 9, because this was a later production movement. The last checkerboard 3/4-plate models observed were in the range of 1,123,533-1,156,496,¹⁵ open-face, and pendant-set movement, and most likely Series 9.

The existence of two movements with the same damaskeening and no markings for position adjustments could have created difficulty for the railroad watch inspectors. Because many of the Series 9 movements have the cutout for the lever-setting mechanism, an unscrupulous person could have added the lever-setting parts while trying to pass off a three-position adjusted Series 9 as a five-position Series 4. This illicit conversion would violate railroad standards where the five-position adjustments were required.

Abbott-Sure Time

Alter and Co. of Chicago marketed a 1905 patented 3/4-plate hunting-case model as the Abbott-Sure Time. These movements were sold separately or as complete watches¹⁶ and were described as follows:

16S Abbott Hunting, -17J adjusted, 3/4-plate two steel exposed winding wheels, double steel roll-

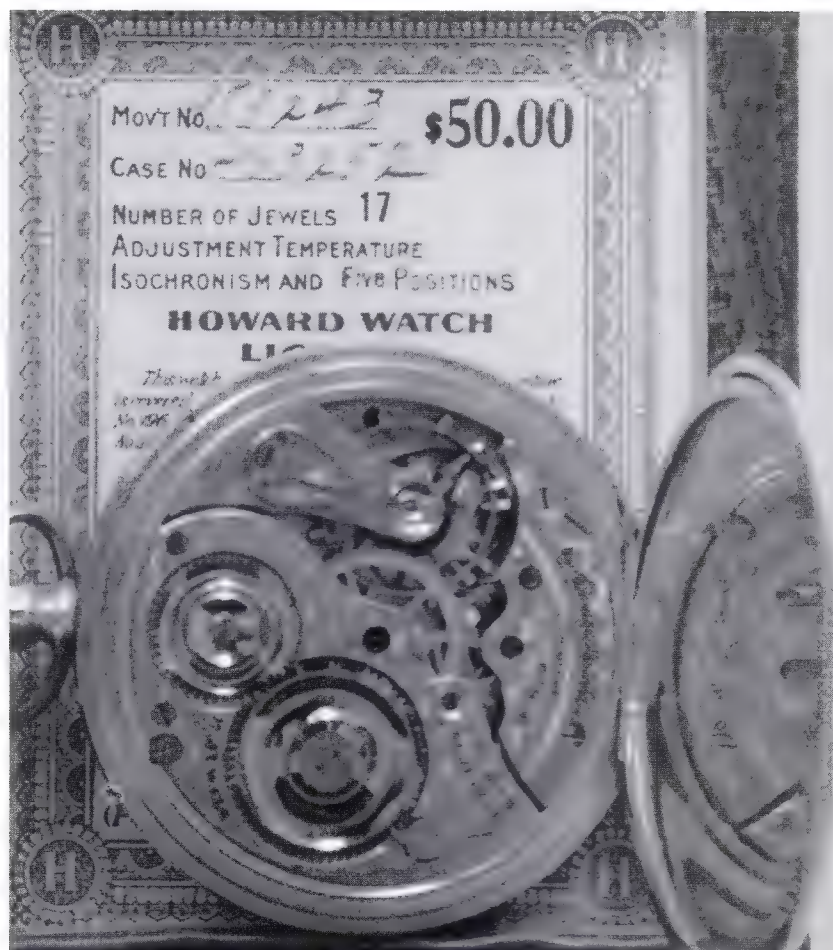


Figure 5. Series 4 S/N 983,243, with original license.

er, whiplash regulator, double sunk glass enamel dial, ruby jewels in gold cups. This movement must be seen to be appreciated. The regular price of this movement is \$15.85. Our net cash cut price, each, \$6.50.

The photograph shown in an Alter and Co. advertisement¹⁷ is that of a hunting-case movement with the concentric circle damaskeening similar to that of Series 3. The advertisement indicates the presence of a double roller escapement, which is not characteristic of Series 3. An examination of an Abbott movement, serial number 993,288, reveals the double roller escapement, brass balance weighting screws, white metal meantime screws, raised gold jewel settings for the center, 4th, and escape wheels (unlike Series 3, which has flat gold jewel settings for the 4th and escape wheels), and flat gold jewel settings for the balance and third wheels. The bridge is simply marked, "Abbott Watch Co.," with no geographic origin. The markings on the barrel bridge are the same as that of the typical 3/4-plate Howard,

which has the markings, 17 jewels, adjusted, and the serial number. However, the Abbott movement is a higher grade than Series 3, because of the double roller escapement; except for the difference in damaskeening, it is most comparable to Series 9. In many of the movements observed the name "Abbott-Sure Time" is not on the dial, because it may not have been baked in or may have worn off with repeated cleanings.

With the production of the 16-size bridge models, Howard Co. sold the finished hunting-case movements to Alter Co., which marketed them as Abbott-Sure Time watches. Perhaps Howard was planning to discontinue them and saw a favorable business opportunity—an example of Howard watches being marketed by a non-Howard company. Other major producers, including Waltham, Hamilton, and particularly Illinois, had this contracting practice.

Series 3 movements that were produced as Abbotts had high serial numbers in the range of 970,000-995,000.¹⁸ To market some of these as open-face watches, the 4th wheel post was shortened and a spe-

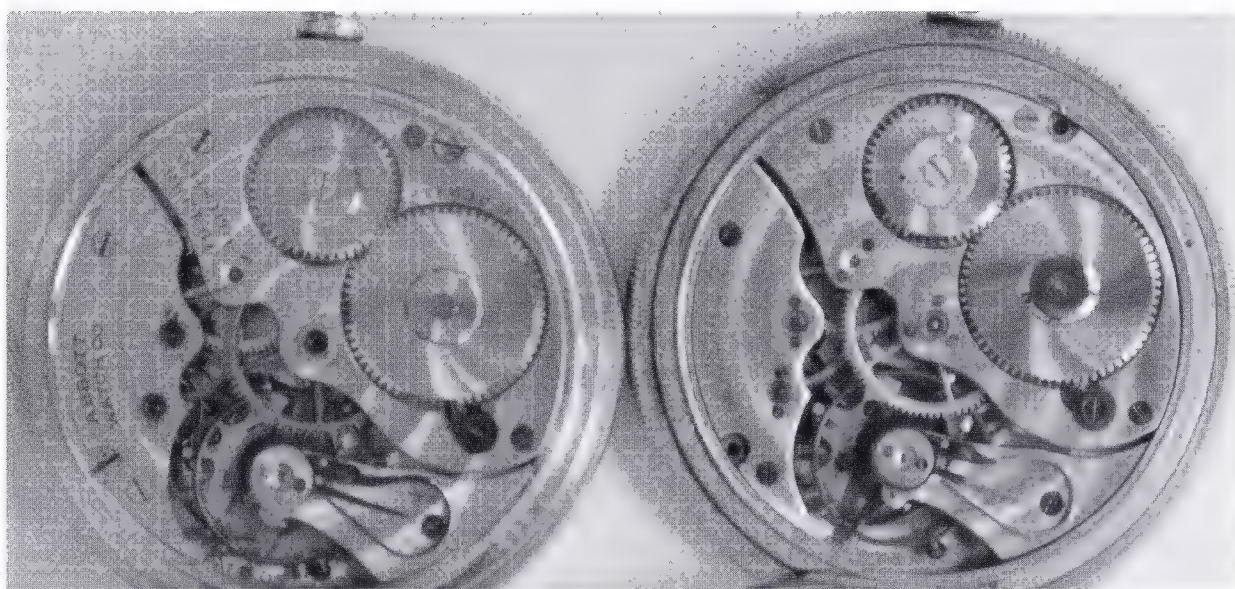


Figure 6. Abbott S/N 993,288, left. Series 3 S/N 946,590. Both are hunting models, with circular damaskeening.

cial dial with no seconds bit was used. The hunting-case models came in different grades of gold-filled cases as well as in 14-karat models. Based on the known quality of the movement, the consumer did get a “good buy,” if appreciative and knowledgeable of the true manufacturer. Figure 6 shows an Abbott and a Series 3 hunting movement.

Climax

The Climax, a second contract movement, was produced as a gilt, 7-jewel, open-face movement.¹⁹

Design & Materials Changes during Production

In an early materials listing, circa 1910,²⁰ the part

numbers are listed by using four digits beginning with 2001. Two grades of material are given; the main differences are summarized in Table 3. Grade 3 describes material for the higher-grade double roller escapement with a higher-grade balance and winding wheels, presumably Series 2 and 4. Grade 4 uses lower-grade material and had a single roller escapement, presumably Series 3. Other parts listed were the same for both material grades. There is no association of a specific part number with a series number, whether 2, 3, 4, or 9.

In a later materials catalogue, circa 1919,²¹ there is the association of part number with series number. In this listing the part numbers are composed of three digits in the range of 101-377 and include material for the 16-size bridge models and the 3/4-plate Series 3 and 9, but

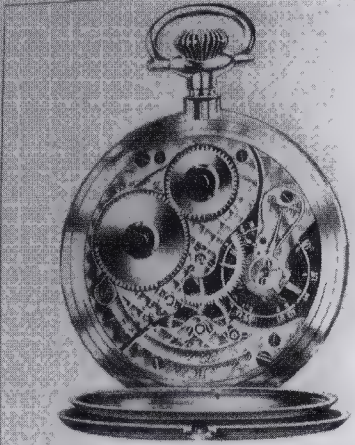
Table 3. Major differences in grades of material used in the 1905, 3/4-plate movements^a

Parts	Grade 3 ^a	Grade 4 ^b
Ratchet and crown Wheel designs	Concave, high polish	Flat, rayed, or damaskeened
Escapement and pallet	Double roller	Single roller
Balance	All gold screws	Gold meantime screws

Source: 1910 Catalogue of Materials, Tools, and Supplies for Watchmakers, Jewelers and Opticians (Boston, MA: E. A. Cowen and Co.)

^aGrade 3 refers to Series 2 and 4.

^bGrade 4 refers to Series 3.



**16-SIZE, 17-JEWEL,
3-4 PLATE (1905) MODEL**
Double Roller Five Positions Adjusted
Hunting or Open-Face

Closely adjusted to temperature, isochronism and five positions. Every Howard Watch is cased and adjusted in its own case before leaving the factory. Howard movements and cases are not sold separately. This grade meets all requirements for railroad service and is accepted by general inspectors.

For Description and Prices see opposite page

DESCRIPTION AND PRICES
16-SIZE, 17-JEWEL, 3-4 PLATE

HOWARD
17 fine jewels in gold or steel. Includes one oriental sapphire pillar stone.

BALANCE AND ESCAPEMENT
Celebrated Howard Balance Wheel, 17 jewels, 100,000 beats per hour, runs true and is dependable under all trying conditions. Double-roller escapement and wheel.

DIAL
Dial is hand-made, double roller, 17 jewels, 100,000 beats per hour, enamel, with distinctive Howard pattern and minute track. Also special railroad dial with minute track, sapphire crystal, desired. See illustration, page 26.)

HUNTING AND OPEN-FACE
Made in both Hunting and Open-Face. Hunting watches are pendant setting only. Open-Face watches are lever setting.

18 K. SOLID GOLD, EXTRA HEAVY

<i>Hunting</i>		<i>Open-Face</i>
No. 412, Plain	\$120.00	No. 412, Plain \$120.00
No. 413, E. T.		No. 413, E. T.

14 K. SOLID GOLD EXTRA HEAVY

No. 419, Plain	\$100.00	No. 419, Plain \$100.00
No. 420, E. T.		No. 420, E. T.

14 K. SOLID GOLD, HEAVY

No. 430, Plain	\$85.00	No. 430, Plain \$85.00
No. 440, E. T.		No. 440, E. T.

"JAS. BOSS" OR "CRESCENT" GOLD FILLED
(Guaranteed 25 Years)

No. 450, Plain	\$47.50	No. 450, Plain \$45.00
No. 460, E. T.		No. 460, E. T.
Screw Bezel, Solid Back, Swing Ring, Dust-Proof		No. 475, Plain \$45.00
		No. 485, E. T.

Figure 8. Series 4 advertising material from *Howard Watches*, 14-15. REPRINT WITH PERMISSION FROM ROBERT G. SPENCE, FNAWCC/AMERICAN REPRINTS CO.

roller fitting rollers, depending on the nature of the escapement. With the introduction of the friction staff some later Series 9 movements used this style.

Balance cap jewel: For Series 2 and some Series 4s, a raised gold jewel setting was used in a concave opening. A flat gold jewel setting was used for Series 3, some 4, and 9. Later Series 9 movements used a dome held in place by two screws from under the bridge.

Patent marking: Early models did not have a patent marking. Later movements were marked "PAT'D '05" at the outer edge of the pillar plate under the balance wheel. Table 5 compares structural differences among the models.

Longevity of the 3/4-Plate Models

Through the advertising material,²³ the longevity of

Table 4. Part numbers for balance staffs and rollers, circa 1910


	Double roller staff	Single roller staff
Rollers	2072	2073
Single roller escapement:		
Roller with jewel ^a	2105	2106
Double roller escapement:		
Roller table with jewel ^a	2107	2108
Safety roller	2109 ^b	2110 ^c

Source: *E. Howard Watch Works, 1918, Catalogue No. 7* (Arlington, VA: Arlington Book Co., 1988), reproduction.

^aRoller Nos. 2105 and 2107 have a large hole opening because they have to fit over the wide double roller hub, whereas Nos. 2106 and 2108 have smaller openings to fit over the thinner single roller shaft.

^bSafety roller No. 2109 is flat and fits on the balance staff just under the double hub, allowing for its needed separation from the roller table.

^cSafety roller No. 2110, with the small diameter opening, is T-shaped and fits on the thinner shaft under the roller table, allowing for the separation of the two rollers and giving the properties of a double roller escapement.



**16-SIZE, 17-JEWEL,
3/4 PLATE (1905) MODEL**
Single Roller. Three Positions Adjusted.
Hunting or Open-Face.

Adjusted to three positions, isochronism and temperature—the Howard keeps accurate time despite extremes of heat and cold. A dependable timepiece for daily pocket use. Every Howard Watch is cased and timed in its own case at the factory. Howard movements and cases are not sold separately.

DESCRIPTION AND PRICE
16-SIZE, 17-JEWEL, 3/4 PLATE (1905) MODEL

JEWELS
17 selected jewels in gold setting, including an oriental sapphire for the escape wheel.

BALANCE AND ESCAPEMENT
Celebrated Howard Balance Wheel, tempered, will not knock out of true vibration under the most severe test. Single roller escapement and escape wheel.

DIAL
Dials are hand engraved, with distinctive Howard enamel, with distinctive Howard enamel.

HUNTING AND OPEN-FACE
Made in both Hunting and Open-Face, but setting only.

18 K. SOLID GOLD, EXTRA HEAVY

Hunting	Open-Face
No. 312, Plain	No. 312, Plain
No. 312, E. T.	No. 312, E. T.
\$115.00	\$150.00

14 K. SOLID GOLD, EXTRA HEAVY

Hunting	Open-Face
No. 310, Plain	No. 310, Plain
No. 310, E. T.	No. 310, E. T.
\$95.00	\$85.00

14 K. SOLID GOLD, HEAVY

Hunting	Open-Face
No. 330, Plain	No. 330, Plain
No. 330, E. T.	No. 330, E. T.
\$80.00	\$70.00

"JAS. BOSS" OR "CRESCENT" GOLD FILLED
(Goldsilver 25-30%)

Hunting	Open-Face
No. 350, Plain	No. 350, Plain
No. 350, E. T.	No. 350, E. T.
\$37.50	\$35.00

Screw Bezel, Solid back, Swing Ring, Dust-Proof

Figure 9. Series 3 advertising material from *Howard Watches*, 16-17. REPRINT WITH PERMISSION FROM ROBERT G. SPENCE, FNAWCC/AMERICAN REPRINTS CO.

the 3/4-plate models can be inferred. Series 4 was the first to be discontinued followed by the open-face Series 3. The hunting Series 3, as well as both the hunting and open-face models for Series 2 and 9, is listed circa 1911.²⁴ Undated advertising material lists only the hunting Series 3 and the open-face and hunting Series 9.²⁵ The Howard Catalog, circa 1918,²⁶ lists only the Series 9. The materials catalog published in 1919 still lists material for Series 3 and 9, but no longer for the 3/4-plate Series 2 and 4.

Unlike the other major manufacturers who produced a list of serial number intervals associated with the model of the movement, one cannot be located for the Keystone-Howard Co. Kent Singer²⁷ has compiled an anecdotal listing of serial numbers for the 3/4-plate movements describing the damaskeening, setting, and whether hunting or open face. From this information one can roughly estimate the serial number ranges for the production of the different 3/4-plate series (Table 6).

Editor's note: Robert G. Spence, FNAWCC, graciously granted us permission to use the images from the books his company published in this article. During a phone conversation with him on September 13, 2016, he informed me that he inserted an NAWCC membership application into each book he printed and mailed to his customers. His efforts helped to build the Association's membership in its first 25 years of existence. His membership number is 3999, and he joined the NAWCC in 1958.

About the Author

Selman A. Berger, PhD, is a professor emeritus of analytical chemistry from John Jay College of Criminal Justice, CUNY. He has been collecting, researching, and restoring pocket watches for 40 years, with a particular interest in the Keystone Howard watches about which he has written several articles, among others, for the *NAWCC Bulletin* and the *Watch & Clock Bulletin*.

Notes

1. Cross and Beguelin, *Material Catalogue*, circa 1910. This is the best sourcing available.
2. "Keystone-Howard 16-Size, 17-Jewel, 3/4-Plate Movement Examples," Kent Singer, NAWCC Encyclopedia, accessed October 5, 2015, http://mb.nawcc.org/org/showwiki.php?title=Keystone-Howard_16-Size_17-Jewel_3_4-Plate_Movement_Examples.
3. Roy E. Ehrhardt, *American Pocket Watch Identification and Price Guide-Book 2* (Kansas City, MO: Heart of America Press, 1974), 180. Photo 3 is a reproduction of the 1905 magazine advertisement.
4. *Howard Watches* (St. Louis, MO: American Reprints Co., 1969) 12-13. This booklet provided reprints of original Howard advertising material, describing 16-, 12-, and 10-size watches, circa 1907-1921.
5. Ibid.
6. Ehrhardt, *American Pocket Watch Identification*, 180.
7. Ibid.

Table 5. Comparison of observed structural characteristics of the 16-size, 3/4-plate, 1905 movements^a

Characteristics	Series 2		Series 3/Abbott		Series 4/9 ^b	
	PS ^c	LS ^d	PS	PS	PS	LS
Open face	6	10	9	None	9	11
Hunting	4	None	6	3	3	None
Winding Wheels						
Concave, high polish	10	10	None	None	None	5
Flat, rayed	None	None	15	3	12	6
Center Wheels						
Gold plated	5	None	13	None	None	None
Brass	1	10	2	3	7	11
White plated	4	None	None	None	2	None
Train Wheels (3rd, 4th)						
Gold plated	2	None	None	None	None	None
Brass	4	9	15	3	7	11
White plated	4	1	None	None	3	None
Pallet Bridge						
Circular shape	8	10	7	None	None	None
"T" shape	2	None	8	3	12	11
Patent date						
Absent	5	1	3	None	None	None
Patent '05	5	9	12	3	12	11
Click						
Circular	4	None	None	None	None	None
Small	6	10	15	3	12	11
Meantime screws						
Gold	10	10	15	None	12	11
White	None	None	None	3	None	None
Balance weight screws						
Gold	10	10	None	None	None	11
Brass ^e	None	None	15	3	8	None

^aAll observations were made on movements in the possession of the author. In some instances, partial movements also were examined.

^bAll the pendant-set movements observed had brass balance weight screws and are presumably Series 9, whereas all the lever-set movements observed had gold weight screws and are presumably Series 4.

^cLS stands for lever set.

^dPS stands for pendant set.

^eBalance weighting screws could be either brass or gold plated over brass.

8. Ibid, 16-17.

9. Young & Co., *Catalogue of Watches Illustrated & Priced* (Wantagh, NY: Seymour Glick Enterprises, 1911), 45. This is the best sourcing available.

10. *Howard Watches*, 14-15.

11. Ed Ueberall and Kent Singer, The Railroaders' Corner, *NAWCC Bulletin*, No. 321 (August 1999): 502-503.

12. Young & Co., *Catalogue of Watches*.

13. *Howard Watches*, 14-15.

14. "Keystone-Howard 16-Size, 17-Jewel, 3/4-Plate Movement Examples," Kent Singer.

15. Ibid.

16. Roy Ehrhardt, *American Pocket Watch Indicator: Identification and Price Guide* (Kansas City, MO: Heart of America Press, 1976), 24-25. A reprint of an advertisement from the Alter and Co., Chicago, IL, circa 1915.

17. Ibid.

18. "Keystone-Howard 16-Size, 17-Jewel, 3/4-Plate Movement Examples," Kent Singer.

19. Ibid.

20. Cross and Beguelin, *Material Catalogue*.

21. Keystone Watch Case Co., *Material Catalogues, circa 1919* (Shingle Springs, CA : Clocks Press, 1999). This is the best sourcing available.

Table 6. Observed serial number intervals for the 16-size, 3/4-plate 1905 movements

Series	Serial number ranges	Predominating damaskeening pattern
2	857,222-857,920	Narrow parallel lines
	870,870-870,107	Narrow parallel lines
	913,012-913,506	Wide parallel lines
	913,720-914,357	Wide and narrow parallel lines
	934,160-935,037	Narrow parallel lines
	935,232-935,764	Narrow parallel lines
3	854,010-857,199	Circular and rayed
	859,553-859,939	Circular
	870,239-912,993	Circular and rayed
	914,507-917,969	Circular
	921,071-933,942	Circular
	936,252-950,929	Circular
Abbott	971,606-971,991	Circular
	973,099-973,694	Circular
	975,024-975,942	Circular
	979,098-981,842	Circular
	993,201-993,952	Circular
4 and 9	913,611-913,662	Checkerboard
	935,089-935,226	Checkerboard
	935,863-935,943	Checkerboard
	950,967-971,350	Checkerboard
	972,002-972,959	Checkerboard
	974,002-974,944	Checkerboard
	978,009-978,905	Checkerboard
	1,123,553-1,156,496	Checkerboard

Source: Kent Singer, "Keystone-Howard 16-Size, 17-Jewel, 3/4-Plate Movement Examples," NAWCC Encyclopedia, accessed October 5, 2015. http://mb.nawcc.org/showwiki.php?title=Keystone-Howard_16-Size_17-Jewel_3_4-Plate_Movement_Examples.

22. Cross and Beguelin, *Material Catalogue*.
23. Howard Watches, 12-13; Young & Co., *Catalogue of Watches*, 45; and Keystone Watch Case Co., *Material Catalogues*.
24. Young & Co., *Catalogue of Watches*, 45.
25. Howard Watches, 12-13.
26. E. Howard Watch Works, 1918, *Catalogue No. 7* (Arlington, VA: Arlington Book Co., 1988). This is the best sourcing available.
27. "Keystone-Howard 16-Size, 17-Jewel, 3/4-Plate Movement Examples," Kent Singer.

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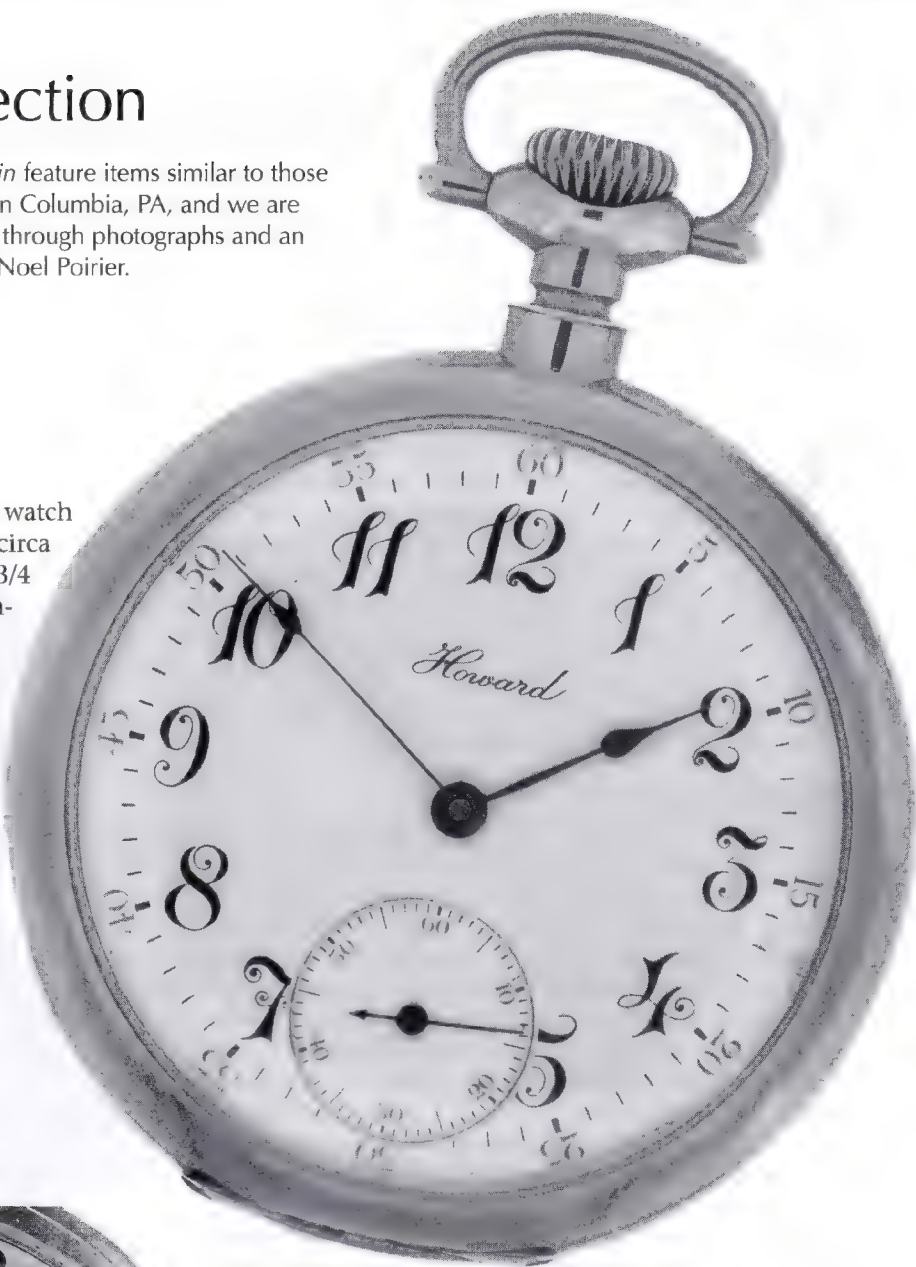
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Collection Connection

Several articles in the *Watch & Clock Bulletin* feature items similar to those in the National Watch and Clock Museum in Columbia, PA, and we are highlighting those timepieces in this feature through photographs and an explanation provided by Museum Director Noel Poirier.

Pocket Watch

This is a 16-size, Series 3, pocket watch made by E. Howard Watch Co. circa 1905. It has a 17-jewel, adjusted, 3/4 plate movement marked with serial number 916835. The movement is finished with damaskeening and gold jewel settings. The single sunk Arabic dial with red marginal figures and seconds is marked "Howard". The watch is housed in a Keystone 18K gold open-face case marked "E. Howard Watch Co., 141883". It has the accession number 84.83.25.



Watch Holders and Litchfield Clocks: A Common Thread?

by Patricia "Pat" Holloway (TX)

Various horological items, such as watch holders and clock cases produced by Litchfield Manufacturing Co., were made of paper-mache. Several methods, including japanning, stenciling, and painting or applied ornamentation, were used to make these seemingly fragile items more durable and decorative. Although similar japanning and ornamentation processes were used to produce other items, such as ironware and tinware, this article explores their uses on paper-mache.

Paper-mache

Paper-mache¹ translates into "chewed paper," but it likely was mashed rather than chewed. Although the history of paper-mache dates to the ancient Far East, it did not reach Europe until the twelfth century. In the late fifteenth century French craftspeople used paper pulp to make architectural ornaments and small articles. The architectural items included cornices, moldings, and ornaments associated with plaster or wood. They were lightweight, durable, and easily painted, which made them quite popular. By the late seventeenth century paper mills emerged in England, and by the eighteenth century England had two paper-mache industries: paper hangings and japanned items.² Some of these products were exported to the United States, and by the early 1700s japanned paper-mache items were being made in Boston, likely by English immigrants. In the mid-1700s japanned paper-mache furniture was being made in New York.³

By the mid-1800s Litchfield Manufacturing Co. was producing various paper-mache items in Litchfield, CT. These items were constructed by using the English version of paper-mache, a millboard made of several sheets of soft paper glued together and molded or cut into scrolls and scallops. Workers from England were brought in to train the American workers and supervise the processes. According to Margaret Beckwith, whose grandfather was founder and president of Litchfield Manufacturing Co., these professional japanners and artists were paid \$10 per day. They were occupied mainly with the ornamental work.⁴ The japanners from England directed the work and instructed local women in japanning and painting. Experienced workers were



Figure 1A. Front view of the Paris mantel clock with a paper-mache front by Litchfield Manufacturing Co. COURTESY OF THE NATIONAL WATCH AND CLOCK MUSEUM.

paid \$6-\$10 a day. The first products were letter holders, card trays, pierced hand and standing screens, and yarn holders that were rather flimsy. The pieces were made in small sections and seamed with wire; then, the seams were covered with black paper strips. A year or two later the company turned its focus to clock cases.⁵

Litchfield clocks in paper-mache cases were exhibited at the 1853 New York Exhibition of the Industry of All Nations. The catalog entry is as follows: "Philosophical Instruments, Etc.—Class 10. #113 Various styles of clocks, with brass movements, in papier-mache cases—Litchfield Manufacturing Co., manu. Litchfield, Connecticut." There are also catalog entries for "#107 Plain and ornamental marine and pendulum clocks,

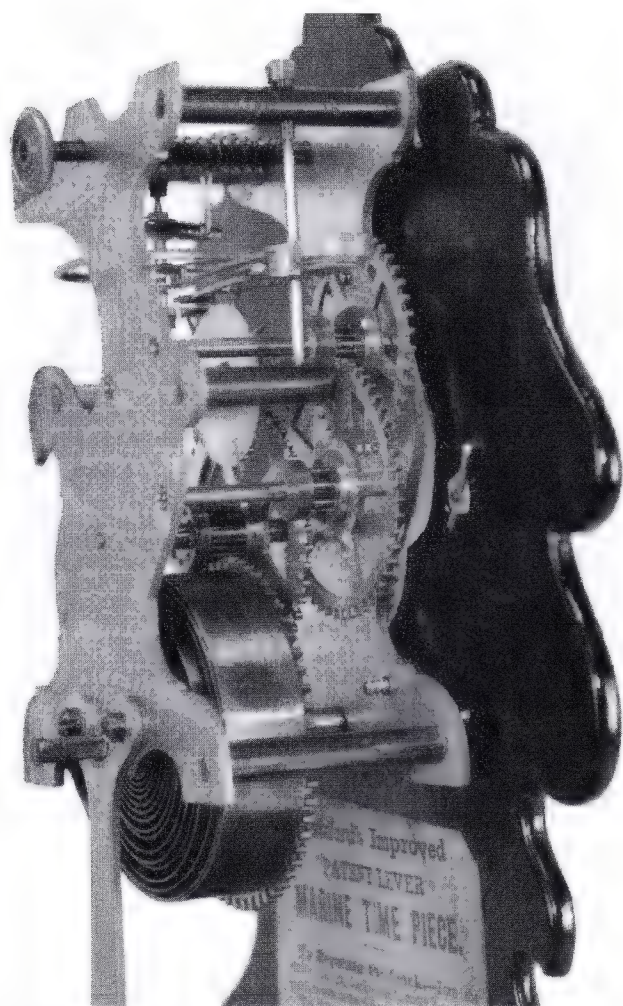


Figure 1B. Side view of the Paris mantel clock.
COURTESY OF THE NATIONAL WATCH AND CLOCK MUSEUM.



Figure 1C. Back view of the Paris mantel clock
COURTESY OF THE NATIONAL WATCH AND CLOCK MUSEUM

and time-pieces of superior construction.—T. Terry, President of the Ansonia clock Company, manu. Ansonia, Connecticut” and “#111 Eight-day clocks of various descriptions. Thirty-hour clocks.—A. S. Jerome, manu. 175 Broadway, New York City.”⁶

Several other American companies made paper-mache items in the 1800s, including Wadhams Manufacturing Co. in Torrington, formerly Wolcottville, CT, and Bird Japanning Co. in Boston, MA.⁷ However, Litchfield Manufacturing was the sole manufacturer of paper-mache clock cases, and each case had a paper label printed on the press of *The Litchfield Republican*. Many companies purchased the new paper-mache cases for their movements.⁸ Moreover, Litchfield Manufacturing appears to have purchased its movements from several companies. Noted horological researcher Brooks Palmer wrote, “This firm turned out good clocks. Most of them were cased in papier mache with mother-of-pearl inlay, their movements regulated by both pendulum and es-

cape wheel, and powered by both weight and spring drives, many have proved sturdy enough to be running a hundred years later.”⁹

Several examples of Litchfield clocks are in the National Watch and Clock Museum in Columbia, PA. These clocks provide a sampling of Litchfield Manufacturing Co.’s products. Figures 1A-1C are a Paris mantel clock mounted on a wooden base with a glass dome. It has a 30-hour marine timepiece movement with Samuel N. Botsford’s lever escapement. The paper-mache front was made by Litchfield Manufacturing and the clock by Jerome Manufacturing Co. in New Haven, CT. Figure 2 is a black japanned paper-mache case with pearl inlay and eagle on top. This clock is an 8-day alarm marine clock manufactured by Litchfield Manufacturing.¹⁰ Figure 3 is a wall clock with a patriotic-themed Litchfield Manufacturing case of paper-mache and mother-of-pearl. The 8-day clock in Figure 4 has a case made of wood and paper-mache by Litchfield Manufacturing. The case

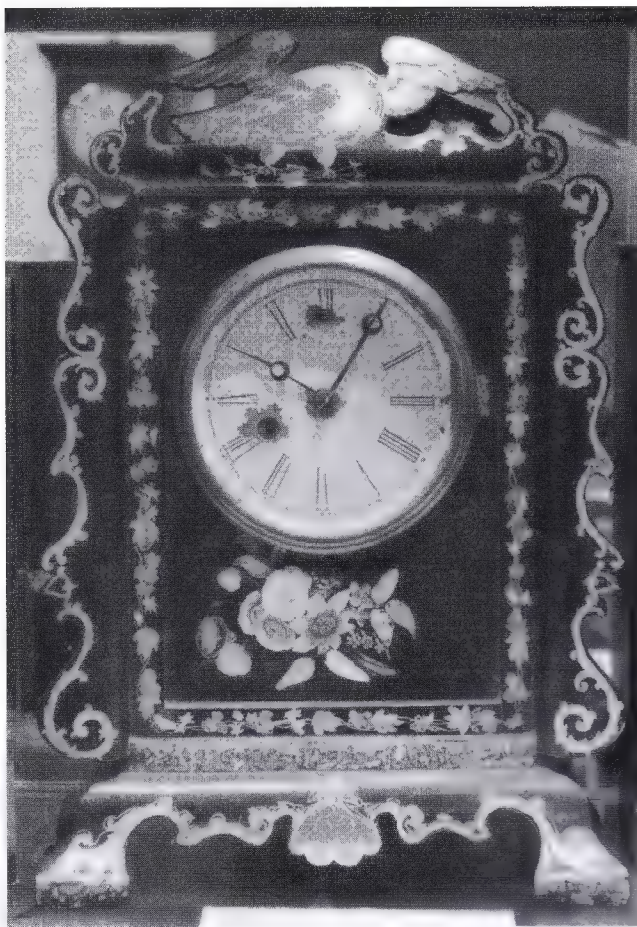


Figure 2. Front view of a clock with a black japanned paper-mache case. COURTESY OF THE NATIONAL WATCH AND CLOCK MUSEUM (2).

was painted and stenciled with mother-of-pearl inlay. Its brass movement was manufactured and sold by Forstville Manufacturing Co.

To better understand the paper-mache industry, it's helpful to look at the processes of creating the finished products. Early English paper-mache items were created from paper pulp, which was mixed with a binder and perhaps other materials, depending on its intended use.

On November 20, 1772, Henry Clay, well known in the English paper-mache industry, was awarded a British patent for making paper-mache, or as Clay called it, "panel," because it could be used for "making in paper high varnished pannels [sic] or roofs for coaches, and all sorts of wheel carriages and sedan chairs, pannels [sic] for rooms, doors, and cabbins [sic] of ships, cabinets, bookcases, screens, chimney pieces, tables, teatrays [sic] and waiters."¹¹ This method made the paper dampproof, stronger, and more versatile. Large sheets were made so products normally constructed of wood or metal could now be made from paper. Clay advertised the pieces made from this product as "paper ware." This meth-



Figure 3. Front view of a wall clock with a Litchfield Manufacturing case of paper-mache.

od came to be referred to as the "best" or "real" way; however, it was labor intensive and thus more expensive than products made from pulp. By the early 1800s manufacturers saw that these methods could be used to layer paper on preshaped molds as was previously done, reducing the cost. The early molds were made of wood and later from brass, copper, hollow tin, or solid iron. These durable molds could be used for many years.¹²

After Clay's patent expired, this method was widely used. Women and girls seated around a table did much of the work in making pasteboard. About ten sheets of soft, unsized paper were cut to the desired size. Before placing each layer into a mold, both sides were covered with a paste made of glue and flour dissolved and boiled in water. The layers were pressed flat with a trowel-like tool to remove any bubbles. This job required skill and patience. The edges were then trimmed even with the mold. The layers were drenched in linseed oil to make the product waterproof and then dried at a temperature of 100°F. Once the layers dried and cooled, they were smoothed with a plane made specifically for this work and then sent to be japanned.¹³

Japanning

Japanning, or imitation lacquering, was used on iron,



Figure 4. Front view of a clock with a case made of wood and paper-mache. COURTESY OF THE NATIONAL WATCH AND CLOCK MUSEUM.

tin, and paper-mache. Most japanned paper-mache goods had a base of black tar varnish—a mixture of amber, linseed oil, rosin, and asphaltum thinned with turpentine. Asphaltum is a slow drying substance made from the residue of petroleum or coal tar. For general use, there was also oil varnish made of linseed oil, rosin, and spirits of turpentine. Spirit varnish, which dried rapidly to a hard brittle surface, was made by dissolving shellac in alcohol. Lampblack, a form of carbon with a fine powdery consistency, was added to clear varnish to make the black color.¹⁴ As might be expected, the varnish recipes were closely guarded secrets.

The cooled, planed paper-mache item was coated with black tar varnish and then tar varnish only. When the varnish was dry, the item was scraped again with a plane to remove loose particles. It was then varnished multiple times and rubbed with pumice stone between each coat until there was an even surface. When the varnishing layers were complete, polishers rubbed the item with pumice stone to smooth and make it harder. It was then rubbed with sand from pumice stone and then rottenstone. If a bright finish was desired, the item was rubbed by hand with a little finely powdered rottenstone before it was sent to the painters.

All the sources indicate that the Litchfield items were not as fine as those produced in England and France. Most have rough surfaces, and many of the articles were

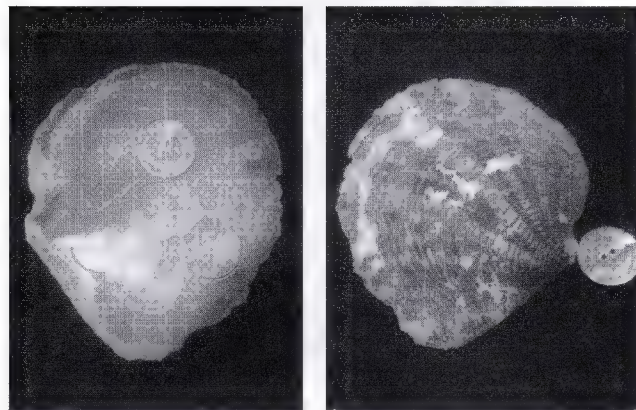


Figure 5 (left) and Figure 6. This shell was used to make "pearl" buttons. The images show from different perspectives the button's proportional size to the shell after the process is completed.

not constructed with the same attention to detail. The rough surfaces may be due to an inferior varnish, combined with less attention to polishing and rubbing. It is possible that time constraints and the need to meet demand could also have contributed to the lesser quality.

Ornamentation

Various styles and materials were used to decorate English japanned paper-mache items. Early methods used gold leaf or gold powders; later, paint, gold leaf, and shell were added. As the industry matured and makers sought more cost-effective methods, transfers, stenciling, and bronzing powders were used. It is interesting that this progression seems very similar to decorations of early clock tablets.

The earliest English pieces—primarily trays made in the last quarter of the eighteenth century—had rather simple gilt borders of gold leaf or gold powder around the rims. Shell, or what we commonly refer to as mother-of-pearl, was widely used in later products. By the end of the century, original art or copies of pictures decorated the center section of trays. Although the names of some of the artists are known, like the early chromolithograph trade cards, the artists did not sign their work on paper-mache items.

There were two forms of stenciling: patterns cut from paper similar to today's stenciling and cork stenciling where the shape was cut into a cork. Cork stenciling was primarily used around the border of trays and other curved or shaped surfaces. The cork stencils could be used to apply stencils to metal leaf. The excess around the pattern was then removed.

Metal leaf and bronzing powders were also used as ornamentation. Gold leaf was quite expensive, so the leaf of other metals and alloys were developed to re-

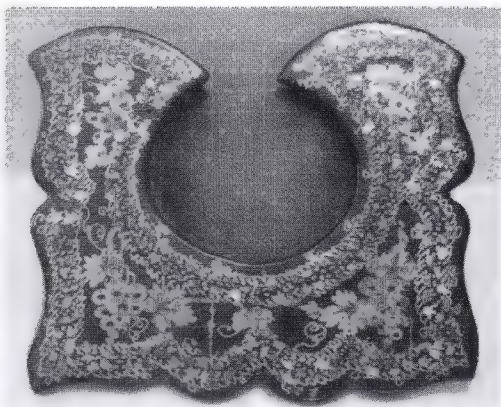


Figure 7. Japanned paper-mache watch holder with gilding and shell ornamentation.



Figure 8. Close-up of japanned paper-mache watch holder showing cracks in the varnish.



Figure 9. Japanned paper-mache watch holder with larger shell ornamentation.

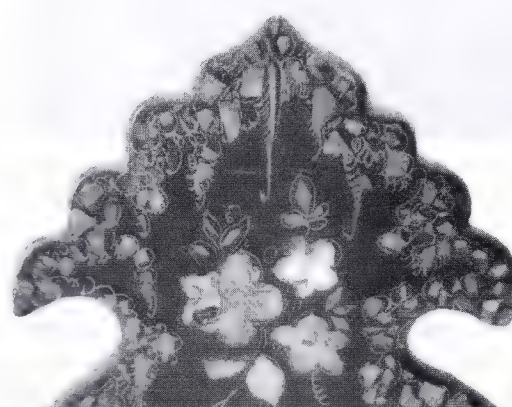


Figure 10. Detail of ornamentation where shell imperfections are seen.

duce the cost. Both were applied by using methods similar to those used in today's clock decoration. Gelatin size was used to apply leaf. For bronzing, the area was coated with varnish. When the varnish was nearly dry, the powder was rubbed into it. In some areas, it was applied more heavily and then faded out to the black background. Designs could then be painted onto the gold background.¹⁵

Stephen Bedford and Charles Valentine patented processes for transfer printing on japanned ware. Bedford's 1759 British patent¹⁶ wasn't entirely practical; however, Valentine improved on the method and received a British patent in 1809.¹⁷ Valentine's patent¹⁸ was for a method to transfer a design in up to four colors. This patent is briefly described as follows:

The design was engraved on as many plates as there were colours [sic] in the picture—he mentions four in his specifications—and an impression on this paper [which had been prepared

with a wash of isinglass¹⁹ to prevent the inks from sinking in] was next transferred to the goods. The paper was then removed by damping, leaving the finished pattern in four shades.²⁰

Valentine also obtained designs in gold by gilding the entire surface of the article and adding a coat of varnish over it. When this was dry, he transferred an impression of the design printed with a mixture of printer's ink and wax. The entire surface was covered with an opaque varnish, leaving the pattern intact. When this layer dried, the wax and printer's ink were removed with warmth and friction to reveal the gold pattern. Because so much of the design was covered with varnish, "the metal leaf used was undoubtedly the inexpensive Dutch metal."²¹ George Goodman's 1852 British patent²² for "ornamenting japanned wares by transferring thereto designs printed upon paper; the said designs being painted in oil colors from engraved plates" was very similar to Valentine's.



Figure 11. Detail of ornamentation where shell imperfections are seen.

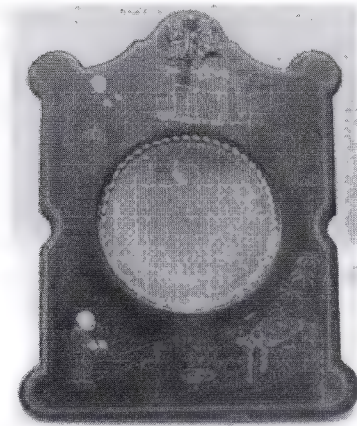


Figure 12. Watch holder with painted hands and faces.

In February 1778 Henry Clay patented using shell, or what we commonly refer to as mother-of-pearl, for ornamenting paper-mache buttons.²³ It's not known if he ever used the method, but other patents followed and shell ornamentation was widely used. In 1825 the firm of Jennens and Bettridge patented a use that had been invented by George Souter, one of their employees. This patent is summarized as "preparing and working pearl-shell into various forms, applying it to ornamental uses in the manufacture of japan ware and other wares and articles [inlaying]."²⁴ Although it is commonly referred to as pearl inlay, the process normally affixes the pearl (shell) with adhesive rather than actually inlaying it. The shell used for decorating japanned pieces was likely from the nautilus or abalone, because these sea creatures had beautiful coloring. However, less expensive shells near the Pearl Islands in the Bay of Panama were used. They had little color and were often painted to obtain the desired effect.²⁵

The ornaments were made from a very thin layer of shell—1/100th-1/40th of an inch thick. The shell was thinned by filing, grinding, and pumice stoning and then hand cut to the required shape with a knife or scissors. In the days before child labor laws, boys and girls normally did this work. Later, a press tool was used to stamp out complicated and irregular shapes, or portions of the shell could be dissolved with a strong acid. In this second method, the part of the shell layer to be used was painted with asphaltum and then hydrochloric acid was poured over the surface to dissolve the parts that were not needed. If many pieces of the same shape were needed, layers of shell were cemented together and then filed or pressed into the desired shape before dissolving the adhesive and separating the pieces.²⁶

A couple of times I have seen shells at antiques markets that had been used to make mother-of-pearl buttons. From the late 1800s to the early 1900s when plastic

came into use, this was a prominent industry along the Mississippi River, with Muscatine, IA, dubbed the "Pearl Button Capital of the World." Figures 5 and 6 show an example of a shell and a completed button. Button-cutting demonstrations in a home shop using a drill and a few simple tools can also be found online. From these examples and descriptions of early methods, it appears that the press process for paper-mache ornamentation may have been very similar to that used later to make buttons. However, because the applied mother-of-pearl is much thinner than a button, it's likely that the outside of the shell was removed before any shapes were cut. As a side note, like many industries, this industry was not without health hazards. Button production often caused respiratory issues because of the inhalation of dust and particles from the sanding and polishing.

The next steps help explain why the shell may look inlaid rather than applied. The shell design was attached to the case with copal or varnish, and then multiple coats of tar varnish were added to fill in the spaces and cover the shell ornaments. The excess varnish was removed with pumice until the shell was visible. After this, the entire article was polished with rottenstone or chamois leather before it went to artists and gilders for additional decoration. In the early days, each piece of pearl was outlined with gold to cover up any cutting issues.

The watch holders in Figures 7-11 provide examples of gilding and shell ornamentation. Although the overall condition is good, especially considering the age, close examination of Figure 8 reveals cracks in the varnish that was used for japanning. A closer examination of Figures 10 and 11 shows either some shell loss or less than perfect handcut pieces that are outlined in gold, as previously mentioned.

From 1870 to 1890 interest in oriental japanned goods resurged, and English companies made some good im-

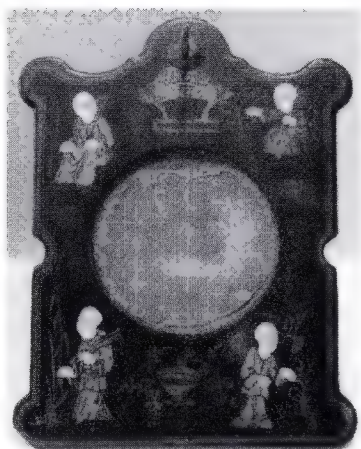


Figure 13. Watch holder with painted hands and faces

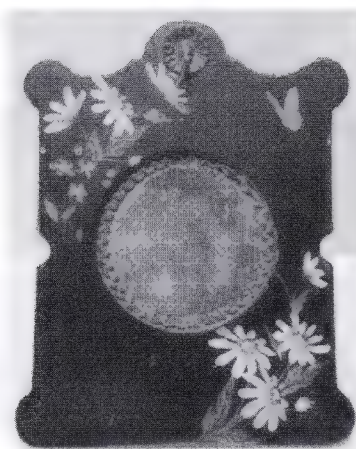


Figure 14. Watch holder with daisy motif.

itations. These small items can often be identified by their decoration that “consisted of a kind of ‘impasto’ work in cream paint [usually the hands and faces of figures], the bodies being indicated with gilt lines on black paper-mache. Time has certainly wearied this kind of decoration, and the gilt has faded, leaving curious looking cream blobs, which, on close examination, turn out to be the faces of sundry ‘Gentlemen of Japan’ who—to quote the opening chorus from *The Mikado*—at this time:

‘Figured in lively paint
In attitudes queer and quaint
On vase and jar and screen and fan.’”²⁷

Figures 12 and 13 show two examples of watch holders from this period. It is interesting that in the first example, the gold has faded to the extent that the overpainted faces seem to float like disembodied alien life forms on a black background. The original gilt transfers in the second example have fared better.

Although these overpainted pieces are discussed in reference to English paper-mache, it actually may have been a German or French company that created them. Adt Frères (1839-circa 1950s), a company that used this style on its goods, was founded in Einsheim, GER. The company added French factories beginning in 1844. From about 1880, one of its much-used designs included “Japanese scenes transfer-printed in gold and colour [sic] with the flesh tints of the figures on early examples, so thickly painted, by hand, that they stand in relief on the surface. It is this overpainting, which distinguishes them from similar articles made in England by Thetford Pulp Ware, although, for reasons of economy, Adt also dispensed with these handpainted additions on later wares.”²⁸ “Thetford decorators never embellished the printed figures with hand-painted impasto faces as was customary in France.”²⁹ Although not marked,

it’s possible that these two holders were Adt products. While the Japanese scenes were also used by Adt during this time, daisies were its most popular design. Figures 14 and 15 show an example of a daisy watch holder that has what appears to be an Adt logo. The three holders in Figures 12-14 seem to be made from bases of the same mold, and the only basic difference is the hook used in Figure 13.

End of the Era

Litchfield Manufacturing was caught up in P. T. Barnum’s project failure in 1856. Although a few paper-mache pieces continued to be produced in America, there does not appear to be any other company that made clock cases. By the end of the nineteenth century the heyday of paper-mache had ended, largely because of changing fashions and tastes. As a testament to its durability, many affordable examples can still be found, often in excellent condition.

Acknowledgments

A special thanks goes to the following people: Charles Schubert for first piquing my interest in paper-mache when he shared some of his findings with the Horological Arts Chapter 120 members in the fall of 2011; Noel Poirier and the National Watch and Clock Museum in Columbia, PA, for providing the beautiful images of Litchfield Manufacturing Co. clocks; the NAWCC Library and Research Center, and especially Nancy Dyer, for assisting in my search for elusive information on watch holders and paper-mache; and the Publications staff for their patience and skill in creating this final article.

Notes

1. With the exception of direct quotes and titles, this article uses the *Merriam-Webster Unabridged Dictionary*’s spelling for paper-mache. The French spelling is



Figure 15. Adt logo on bottom of the daisy watch holder.

papier-mâché.

2. Yvonne Jones, *Japanned Papier Mâché and Tinware c. 1740-1940* (Woodbridge, UK: Antique Collectors' Club, 2012), 23.

3. *Ibid.*, 306.

4. Shirley Spaulding DeVoe, "The Litchfield Manufacturing Company, Makers of Japanned Paper-Mache," *The Magazine Antiques* (August 1960): 151.

5. Shirley Spaulding DeVoe, *English Papier Mâché of the Georgian and Victorian Periods* (Middletown, CT: Wesleyan University Press, 1971), 15-16.

6. *Official Catalogue of the New York Exhibition of the Industry of All Nations 1853* (New York, NY: G. P. Putnam & Co., 1853), 59. Additional information on the future relationship between some of these companies can be found in various *NAWCC Bulletin* and *Watch & Clock Bulletin* articles and other publications by Brooks Palmer and Chris Bailey listed in the references.

7. Jones, *Japanned Papier Mâché and Tinware*, 307.

8. DeVoe, *English Papier Mâché*, 16.

9. Brooks Palmer, "The Litchfield Manufacturing Company," *The American Antiques Journal* (November 1949): 26.

10. Dr. S. P. Pechin, "The Connecticut Marines," *NAWCC Bulletin*, No. 262 (October 1989): 387-398.

11. *Patents for Inventions: Abridgments of Specifications Relating to Trunks, Portmanteaus, Boxes, and Bags* (London, UK: George Edward Eyre and William Spottis-

woode, 1876), 1, A.D. 1772, November 20. No. 1027. Accessed September 19, 2016, <https://books.google.com/books?id=rmctFezZv-kC&pg=PA1&dq=henry+clay+1772+patent+1027&hl=en&sa=X&ved=0ahUKew-jZmtbs3-nLAhWG5CYKHSNoAosQ6AEIzAB#v=onepage&q=henry%20clay%201772%20patent%201027&f=false>.

An excerpt from Henry Clay's specifications is as follows:

My inventions of making paper panels for various purposes are by casting several papers upon boards or plates of regular thicknesses on each side the same, to prevent one side counteracting or drawing with superior force to the other in the state of drying; and when the same is rendered sufficiently strong for the purpose intended it is then planed or cut off at the edges until the board or plate appears, and then taken off such boards or plates. The pieces of paper are afterwards screwed or fastened on boards or plates and put in a stove sufficiently hot to deprive them of their flexibility, and at the same time are rubbed over or dipped in oil or varnish, which so immediately drenches into them as to secure them from damp, &c. After the papers are thus made they are capable of being sawed into different forms, and planed as wood. After the various articles are thus formed in the paper, they are then coated with colour [sic] and oils sufficient to make the surface even, and are then japanned and high varnished.

12. Jones, *Japanned Papier Mâché and Tinware*, 28-29.

13. DeVoe, *English Papier Mâché*, 27.

14. *Ibid.*, 87-88.

15. *Ibid.*, 122-125.

16. *Patents for Inventions: Abridgments of Specifications Relating to Carriages and Other Vehicles for Common Roads* (London, UK: George Edward Eyre and William Spottiswoode, 1880), 17, A. D. 1759, February 10, No. 737. Accessed September 19, 2016. https://books.google.com/books?id=EVWJuzWYHx-gC&pg=PR3&lpg=PR3&dq=Abridgments+of+Specifications+Relating+to+Carriages+and+Other+Vehicles+for+Common+Roads%22&source=bl&ots=TP19jeBwOS&sig=e8qUwwZBmwNjxQfRmYx_tqqzMUQ&hl=en&sa=X&ved=0ahUKewj7oab-k2ZvPAhUGZCYKHUvgD-oQ6AEIOzAF#v=onepage&q=Abridgments%20of%20Specifications%20Relating%20to%20Carriages%20and%20Other%20Vehicles%20for%20Common%20Roads%22&f=false.

An excerpt from Stephen Bedford's specifications is as follows:

A method of impressing in imitation of engraving upon varnish laid upon copper, iron, paper, and other bodys, to be used in coach panels [sic], snuff boxes, and other kinds of merchandise, and

impressions of foliages, figures, decorations, ornaments, and other devices.

Ingrave [sic] any sort of works, figures, or decorations upon copper or any other metal plates, and take off the impression with very thin rolled lead, and with such impression raised therein you may impress the same work upon a body of varnish laid upon copper, iron, paper, or other bodys.

17. Shirley Spaulding DeVoe, *The Art of the Tinsmith: English and American* (Atglen, PA: Schiffer Publishing Ltd., 1982), 104.

18. *Patents for Inventions: Abridgments of the Specifications Relating to the Manufacture of Paper, Pasteboard, and Papier Mâche, Part II* (London, UK: George Edward Eyre and William Spottiswoode, 1859), 13, A. D. 1809, March 20, No. 3,219. Accessed September 19, 2016. https://books.google.com/books?id=mE6McdejTksC&pg=PA13&lpg=PA13&dq=Charles+Valentine+patent+papier+mache&source=bl&ots=BrQNaW7h_E&sig=G_UGfKHue334mk5fyYMAQJr2kVs&hl=en&sa=X&ved=0ahUKewjI6oiKk7TLAhUISyYKHUeLDRgQ-6AEIJAD#v=onepage&q=Charles%20Valentine%20patent%20papier%20mache&f=false

An excerpt from Charles Valentine's specifications is as follows:

A new mode of ornamenting and painting all kinds of japanned and varnished wares of metal, paper, or any other compositions and various other articles.

This invention consists, firstly, in the mode of

producing a 'painted or gilded effect of a landscape, figure, &c,' 'on the surface of any painted, varnished, or gilded body.'

Representations in four colours [sic] may be obtained thus:—Four plates being suitably engraved and supplied with proper colours [sic] are successively impressed on a sheet 'of fine fan, tissue, or other soft paper,' previously 'prepared with gum Arabic, isinglass, or any other glutinous body dissolved in soft water;' the impression must then be suffered to dry in the air for the space of a week, or till the shades are perfectly dry, then 'pencil in the whole of the shadows from outline to outline,' and let the whole harden in the air for the space of a day or two.

The 'impression or painting' so obtained is applied to the surface of wood, paper, &c., previously prepared with a 'thin coat of copal varnish,' and only partially dried, and gently press it down with a sponge well moistened with warm water till the whole is evenly laid. In a few minutes the gum will be sufficiently dissolved and may be washed away with the paper, leaving the 'finished painting of four shades.' Impressions may be made from 'blocks' on the prepared fan paper and transferred, as before described, to the desired surface. Various colours [sic] and gilding may be transferred by the above means.

19. Isinglass is a pure form of gelatin made from the dried swim bladders of some species of fish.

Making Paper-Mache

Most paper-mache made between 1750 and 1772 is similar to that described by Robert Dossie in *The Handmaid to the Arts* in 1758, and other contemporary sources. Yvonne Jones states the following on page 28 of her book titled *Japanned Papier Mâché and Tinware c. 1740-1940*, which is listed among the references for this article:

As Dossie's directions were intended for makers of 'boxes, frames, festoons etc.,' it is clear that his recipe for pulp served makers of architectural ornaments as well. Any paper was suitable for pulping but 'writing paper' was preferred for better work. It was boiled in water until soft enough to form a paste when stirred, then drained and beaten, mixed with a strong solution of gum Arabic and water, and boiled once again, until it reached a suitable consistency for moulding [sic]—the more intricately patterned the mould [sic], the more fluid the mix required. For simple shapes, glue or size could be used as cheaper substitutes for gum

Arabic, but since they shrank on drying, they were not recommended for complex projects.

Dossie also described how flat or shallow objects like snuff-boxes were made from layered paper. Pieces of strong brown paper were cut to shape, moistened with gum water—a mixture of gum Arabic and water—and laid on the convex part of a well-oiled mould [sic]. Three or four further layers were added, each was brushed with a thin paste made from eight-parts boiled flour and water, to one-part size, and covered over the concave part of the mould [sic]. It was then compressed until the layered paper article could be removed without becoming mis-shapen [sic]. When thoroughly dry and hard, it was smoothed, decorated and finally, varnished.

Other methods of making paper-mache can be found on page 502 in *Henley's Twentieth Century Book of Formulas, Processes and Trade Secrets* as listed in the references for this article.

—Patricia "Pat" Holloway (TX)

20. Jane Toller, *Papier-Mâché in Great Britain and America* (Newton, MA: Charles T. Branford Co., 1962), 49.

21. DeVoe, *English Papier Mâché*, 125.

22. *Patents for Inventions: Abridgments of the Specifications Relating to the Manufacture of Paper, Pasteboard, and Papier Mâché, Part II* (London, UK: George Edward Eyre and William Spottiswoode, 1859), 66, A. D. 1852, April 29, No 14,099. Accessed September 19, 2016. https://books.google.com/books?id=mE6McdejTksC&pg=PA13&lpg=PA13&dq=Charles+Valentine+patent+papier+mache&source=bl&ots=BrQNaW7h_E&sig=G_UGfKHue334mk5fyYMAQJr2kVs&hl=en&sa=X&ved=0ahUKEwjI6oiKk7TLAhUISyYKHUeLDRgQ-6AEIJDAD#v=onepage&q=Charles%20Valentine%20patent%20papier%20mache&f=false.

An excerpt from George Goodman's specifications is as follows:

An improved method or improved methods of ornamenting japanned metal and papier mâché wares. These consist in ornamenting of japanned metal and papier mâché wares by transferring thereto designs printed in oil colours [sic] upon paper, the said printed impressions being obtained from a series of engraved plates, on each of which plates those portions only of the design are engraved which are of the same color or into the colour [sic] of which the color on the said plate enters. A variety of mixed colours [sic] or tints, such as green or purple, may be obtained by causing one plate to print its colour [sic] so that it will overlap the colour [sic] printed by another plate.

23. *Patents for Inventions: Abridgments of Specifications Relating to Wearing Apparel, Division IV, Dress Fastenings and Jewellery* (London, UK: George Edward Eyre and William Spottiswoode, 1876), 3-4, A. D. 1778, February 5, No. 1,180. Accessed September 19, 2016. https://books.google.com/books?id=Y3xUAAAYAAJ&pg=PA3&dq=henry+clay+1778+patent+1180&hl=en&sa=X&ved=0ahUKEwi_2rSpjZrPAhXh7oMKHWLP-BwMQ6AEIJDA#v=onepage&q=henry%20clay%201778%20patent%201180&f=false.

An excerpt from Henry Clay's specifications is as follows:

'Making or manufacturing coat, breast, sleeve, vest, and other buttons, japanned, with or without shanks or catgut, or set in cups or sockets of various metals.' Layers of paper are pasted on boards or plates, on each side the same to prevent one side counteracting or drawing with superior force to the other in the state of 'drying.' When the plates are rendered sufficiently strong to be made into buttons, 'the same are planed or cut off at the edges.' The plates are put into a stove 'sufficiently hot to deprive them of their flexibility' and 'at the same time are rubbed over or dipped in oil or varnish, which so immediately drenches into them as to secure them from damp or injury.'

The plates are afterwards cut into round, oval, or other shaped blanks, and a hole is drilled through the middle of each for the admission of a metal shank. The shank is passed through and 'returned on the other side.' The blank and shank 'are fyled [sic] and levelled together,' and a piece of paper is glued or otherwise fastened 'on the top side.' The blank is brought into the form of a button on a lathe 'by turning it off on both sides.'

The buttons are coated with japan and then ornamented with painting, gilding, &c. or 'inlaid with pearl, stones, metal, and various other ornaments.' Sometimes the shank is made with a head which may be 'covered with japan or finished in ornament.' If the buttons are intended for setting in metal or other cups, the blanks are set therein 'with metal, catgut, or other shanks.'

24. Bennet Woodcroft, *Subject-Matter Index of Patents of Invention, Part II,—(N. to W.)* 2nd ed. (London, UK: George Edward Eyre and William Spottiswoode, 1857), 578, 29th March 1825, No. 5,137. Accessed September 19, 2016. <https://books.google.com/books?id=vQ9HAQAAMAAJ&pg=PA578&dq=jennens+bettridge+patent+1825+5137&hl=en&sa=X&ved=0ahUKEwjR9MCFvJ7LAhWCWCYKHbCJDWY-Q6AEIJTAA#v=onepage&q=jennens%20bettridge%20patent%201825%205137&f=false>.

25. Toller, *Papier-Mâché in Great Britain and America*, 51.

26. *Ibid.*, 51-52.

27. *Ibid.*, 58.

28. Jones, *Japanned Papier Mâché and Tinware*, 281-284.

29. *Ibid.*, 277.

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Patents for Inventions: Abridgments of Specifications Relating to Wearing Apparel, Division IV, Dress Fastenings and Jewellery (London, UK: George Edward Eyre and William Spottiswoode, 1876). Accessed September 19, 2016. https://books.google.com/books?id=Y3xUAAAAYAAJ&pg=PA3&dq=henry+clay+1778+patent+1180&hl=en&sa=X&ved=0ahUKEwi_2rSpjZrPAhXh7oMKHWLP-BwMQ6AEIJDAAB#v=onepage&q=henry%20clay%201778%20patent%201180&f=false

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Drop in demand hurting Swiss watch industry

The Swiss watch industry is projecting a bleak outlook for 2017, according to a survey by consulting firm Deloitte released in late September 2016.

"Weaker foreign demand poses the key challenge at the moment," according to Deloitte's annual study, which consists of a survey of more than 50 watch executives as well as discussions and consumer surveys.

Among the factors contributing to a negative outlook underscored by more than 80 percent of survey respondents are the value of the franc and the market in Hong Kong, according to a report in *The Wall Street Journal*.

The Swiss National Bank lifted a cap on the franc's value against the euro, resulting in the franc's jump in value in January 2015. Swiss companies felt the hit because a stronger franc translated into a decline in profits

when it was converted into the Swiss currency.

In China, sales have been affected by its anticorruption measures and visa requirement changes that have curbed tourism, particularly in Hong Kong. And "the sharp appreciation of the Swiss franc . . . led to a rise in the price of imports from Switzerland, further affecting sales," according to the report.

Looking ahead North America could be the next best market for the Swiss watch industry.

"Although the latest export figures from the United States were lower than expected, we still see the U.S. potentially overtaking Hong Kong as the No. 1 market for Swiss watches in 2016 and beyond," said Karine Szegedi, head of fashion and luxury for Deloitte in Switzerland.

To view this story, visit <http://www.wsj.com/articles/swiss-watch-industry-outlook-worsens-1474975126>.

—Therese Umerlik (PA)

Researching Private Label Watches and a Frank Lloyd Wright Connection

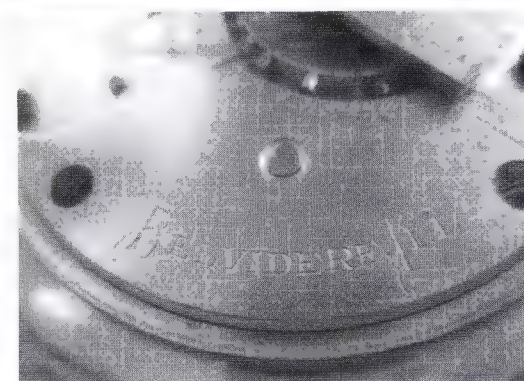
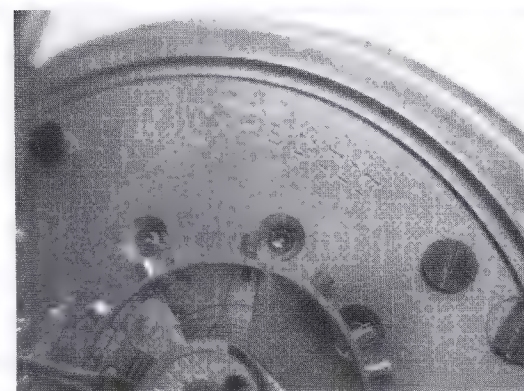
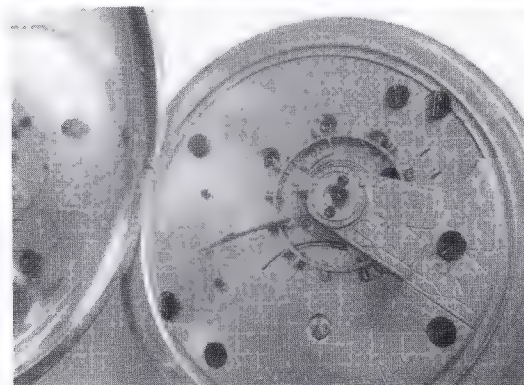
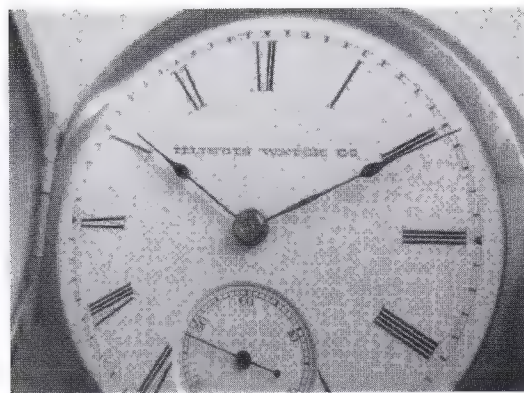
by Thomas Jeswald (IL) and Robert Witzack (WI)

Many watch enthusiasts highly prize the discovery of a timepiece with a connection to the history of their local area. Often that connection comes in a private label printed on a dial or engraved on a movement. Members of the Northern Illinois Watch and Clock Club (NIWCC), which meets in Rockford, are always on the lookout for such items.

In 2013 Bob Witzack purchased a small lot of pocket watches from a Wisconsin collector. The lot included a private label Illinois 18-size, Model 2, lever-set watch with a serial number that indicates circa 1886 manufacture. The movement was engraved "E. E. Pettit" and "Belvidere, Ill." (Figures 1-4).

Witzack finished his restoration of the watch and showed it to other club members. Tom Jeswald, of Belvidere, IL, was particularly interested. Belvidere is a town of about 25,000 located ten miles east of Rockford.¹ Its population reported in the 1890 Census was 3,867.² No NIWCC member had ever seen this watch, so it was interesting, but it was the E. E. Pettit inscription that inspired the research, which led to this article.

The Pettit name is immediately recognized by those who live in or around Belvidere. Pettit Chapel in Belvidere Cemetery, designed by architect Frank Lloyd Wright (1867-1959), was added to the National Register of Historic Places in 1978.³ The chapel at 1100 N. Main St. was to honor the memory of Dr. William H. Pettit (1851-1899), whose grave is nearby.



From top to bottom. Figure 1. Illinois E. E. Pettit private label watch. Figure 2. Movement view of the Illinois E. E. Pettit watch. Figures 3 and 4. Detail of the engraving on the Illinois E. E. Pettit watch movement.

No for Leadville!

But what is the use of going there when you can get

GOLD & SILVER WARE
for less money at

E. E. Pettit's.

I have just received over thirty Castors and 2½ gross of Rogers' Best Plated Knives.

I have the largest stock of Plated Ware in town, and these goods were bought before the advance, and I can save you money on them.

I am also carrying 'Wade & Butcher' and Pipes.

RAZORS,
which are the two best Razors made.

Also have genuine Amber and Coral Beads, Gold and Silver Headed Cases, Silver Beak Combs, Card Cases, and everything else that is kept in a jeweler's stock.
I have added to my stock

STATUARY AND BUSTS,
such as Hebe, Flora, Psyche, Venus, Goethe, Schiller, Rock of Ages, "My Jingo," "Bleeding" and "Writing." When people are bothered to know what to get for a present, remember there is nothing nicer than these for the money.
I am now selling the Ladies

ELGIN WATCHES
at the following prices:

FRANCIS RUBY	\$27 00
LADY ELGIN	13 00
WALL FORDEN	9 50
DAILY STREET	7 75

When you want goods please call on me, and I will do as well as can be done anywhere else. I am not the cheapest man in the world, but there is no one that can sell the same class of goods less than I can.

E. E. PETTIT,
my 4-2m SOUTH BELVIDERE

JOHNSTON & CONRATH'S
ECONOMICAL SPECTACLES

SEE! LOOK! BEHOLD!

A New Sight Has Come to this City
It is Patented Eyesight!

E. E. PETTIT
Is the Happy Possessor.

Spectacle Wearers
Should know that I scientifically adjust the lens to Myopia, Presbyopia, or Hypermetropia eyes. I do it with Johnston & Conrath's

Telescopio Eye-Tester,
which will test each eye, so that I may know the proper lens required. By this means I guarantee your eyes will not become tired by using glasses.

sep16-6m **E. E. PETTIT,**
JEWELER AND OPTICIAN, SOUTH BELVIDERE.

Figure 5. Two E. E. Pettit ads appearing in *The Belvidere Standard* on August 3, 1880, left, and February 3, 1880.

E. E. Pettit's Family and Career

The known Pettit family history began in 1846 with Daniel B. Pettit Sr. migrating to Illinois from Wayne County, PA, with his new bride, Mary Doyle Pettit. The couple had three sons and one daughter, who were all born in Belvidere: Edward Emory Pettit (1847-1924), Daniel B. Pettit Jr. (1849-1908), and William H. Pettit (1851-1899), who was memorialized with the chapel. Little is known about Mary E. Pettit, who was born in 1856.⁴

Two of the sons eventually went into business in Belvidere. Daniel Jr. was a partner in a dry goods business. Edward Emory, known locally as Emory, was a jeweler, "scientific optician," and part-time dentist for 20 years in Belvidere. A newspaper item of that period

mentioned that Pettit received watchmaker training in escapement work from 1871 to 1873 in the factories of Cornell Watch Co. in Chicago and the Elgin National Watch Co.⁵

E. E. Pettit and his various business partners advertised regularly in local newspapers over the years. An 1873 advertisement announced the formation of his first business and stated that Pettit spent the past year "devoted entirely to putting up the B. W. Raymond watch of Elgin, which is considered as fine a watch as is made in America."⁶ The phrase "putting up" we took to mean constructing or assembling. Pettit's year at Elgin National Watch Co. was only his second year in the watchmaking trade.⁷

Some newspaper ads listed the types and styles of El-

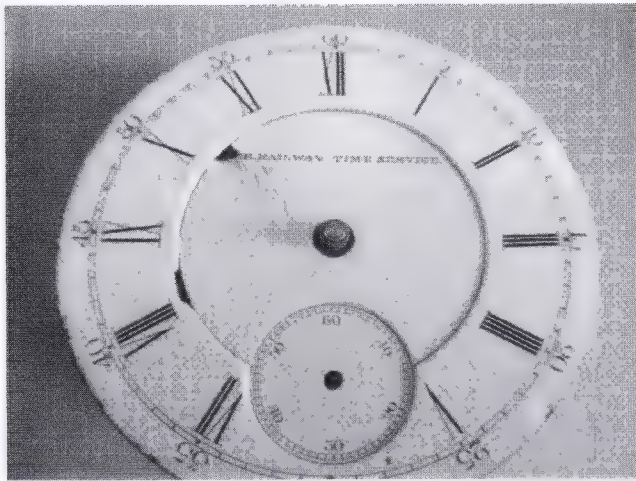


Figure 6. Aurora E. E. Pettit watch, dial side.

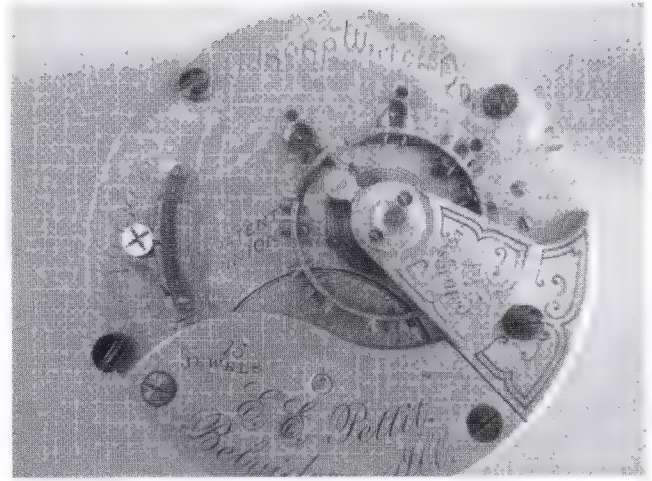


Figure 7. Aurora E. E. Pettit watch, movement view.

gin watches for sale in Pettit's store, Pettit & Bowley. No other brand was ever mentioned in Pettit ads (Figure 5). Beginning in 1880 Pettit's advertising emphasized the sale of eyeglasses more than jewelry.⁸ For unknown reasons Pettit sold his jewelry business circa 1896. He then was employed by National Sewing Machine Co.⁹ (NSM) for a quarter century, until his retirement. No records indicate whether Pettit's work at NSM took advantage of his experience in watchmaking. He was active in his church in his later years and was highly regarded in the community. Upon his death in 1924 he was buried in the Belvidere Cemetery near his parents, brothers, and other family members.¹⁰

Another Discovery

One goal in our research on E. E. Pettit was to identify the specific building addresses of his business. In Pettit's era, newspaper articles and advertisements often gave business locations by street name only and omitted street numbers. Sometimes only a very general location is given. Thus, Pettit's business location was stated at various times as "South Belvidere," or adjoining a drug store, or next to the Post Office, which itself moved several times in those years.

We contacted Bob Lear, a retired Belvidere jeweler, watchmaker, and member of the NIWCC. Lear operated Lear's Jewelry in Belvidere from 1948 to 1988 and knew well the local history. Most important to us, he had attempted to document the jewelry businesses that preceded him in Belvidere.

Lear shared with us an anecdote. One early location of Pettit's shop was on a side street that, as Lear described it, "had three taverns and was always full of drunks." Pettit soon moved around the corner to State Street, which was becoming Belvidere's main business street. Presumably, he found a better class of clientele there. During one of our visits with Lear to discuss the tangled Pettit history, he showed us his workbench and

tools. We were all surprised when Lear noticed a notation he had written on a small box and in the box was an E. E. Pettit watch movement that he forgot he had! At some time during the 26 years since he retired, Lear acquired the movement and put it into his "I'll get to it someday" pile of work (Figures 6 and 7). The 18-size, 15-jewel Aurora, stem-wound movement is not working and has no case. The serial number indicates circa 1885 manufacture. The dial has only the words "FOR RAILWAY TIME SERVICE" and no brand name. The movement is inscribed with the same words that are on the Illinois movement: "E. E. Pettit" and "Belvidere, Ill." With our discovery of two E. E. Pettit watches of different brands, we know there are more potential discoveries.

Wright Question

There are still some big gaps in our story. Most of the known addresses of the Pettit business were demolished long ago, and photos of those buildings have not yet been found. We have yet to find a photo of E. E. Pettit, although photos of several other Pettit family members are available. Unfortunately, there are no surviving members of the family in the area who can be contacted.

Perhaps most intriguing is the Pettit family's relationship with Frank Lloyd Wright. Dr. William Pettit's widow, Emma, commissioned Wright to design the chapel, which was built in 1907.¹¹ The chapel is one of only two structures ever designed by Wright for a cemetery and the only one to actually have been built. The chapel is considered to be one of the earliest examples of his seminal Prairie School style. The broad, overhanging, low-pitched roof has the same lines as many other Wright homes built between 1900 and 1920. The leaded glass windows and interior features could easily fit into a Wright showplace home of the period (Figure 8).

Entire books have been written about the dramas surrounding the construction of some Wright homes, but almost nothing is known about Wright's personal involvement with the chapel. We know that Emma Glasner Pettit's connection with Wright was through her brother, Chicago banker William A. Glasner. His Glenco, IL, Prairie School "summer cottage" was designed by Wright and built in 1905.

As the chapel was being designed and built from 1905 to 1907, Emma continued to live in Cedar Rapids, IA, where her late husband had practiced medicine. It would seem natural to expect Emory, as the elder of the Pettit family in Belvidere, to help his brother's widow with the planning and construction of the memorial chapel. Did E. E. Pettit ever meet Wright? Did Wright ever visit the Pettit family in Belvidere and view the cemetery site? We might never find answers, but the search keeps this hobby interesting.

Acknowledgments

We gratefully acknowledge the research assistance of Jillian Fuller of the Ida Public Library, Belvidere, and Lonna Bentley of the Boone County Historical Museum, Belvidere.

Sadly, Bob Lear, who helped us understand local history and discovered the second Pettit watch in his personal collection, passed away while this article was in preparation. We dedicate the article to his memory. Visitors to the Boone County Historical Museum can see a permanent exhibit of Lear's watchmaker's bench and mementos from Lear's Jewelry.

About the Authors

Tom Jeswald is secretary and newsletter editor of the Northern Illinois Watch and Clock Club. Bob Witzack is curator of the club. Both are members of the NAWCC and the NIWCC.

References and Notes

1. The population of Belvidere, as of the 2010 Census, is 25,585. "2010 Population Finder," US Census Bureau, accessed March 3, 2016, <https://www.census.gov/popfinder/>.
2. The census information for that year was destroyed in a fire, but it can be found at the National Historical Geographic Information System website at www.nhgis.org. "Availability of 1890 Census," US Census Bureau, accessed March 3, 2016, https://www.census.gov/history/www/genealogy/decennial_census_records/availability_of_1890_census.html.
3. The Pettit Memorial Chapel was entered into the register in 1978 and described as having a prairie school-style architecture. "National Register of Historic Places NPS Focus," National Park Service, accessed March 3, 2016, <http://focus.nps.gov/NRHP/AssetDetail/NRIS/78001112>.



Figure 8. Pettit Chapel interior view.

4. All birth and death dates were compiled by volunteers for the Local History Room at the Ida Public Library, Belvidere, IL. Birth and death certificates were available for some of the Pettit family. Both authors actually visited the Belvidere Cemetery to examine the inscriptions on each Pettit grave as additional confirmation of dates and spellings of names.

5. This information was found on the front page of the December 23, 1873, issue of *The Belvidere Standard*.

6. This advertisement was published in the December 23, 1873, issue of *The Belvidere Standard*.

7. This information was found on the front page of the December 23, 1873, issue of *The Belvidere Standard*.

8. E. E. Pettit had obtained diplomas from Chicago Ophthalmic College and Professor King's School of Optics in Ohio, and by the late 1880s he was referred to as Professor E. E. Pettit, optician. *Personal Points*, "Local Items," *The Belvidere Standard*, August 7, 1889.

9. During that period National Sewing Machine Co. rapidly became Belvidere's largest employer. In addition to sewing machines, it manufactured Belvidere brand bicycles, Vindex cast-iron toys, Eldredge automobiles, and Happy Days washing machines ("No More Blue Mondays"). See also Graham Forsdyke, "From Eldredge to National to Janome: Graham Forsdyke Takes a Brief at the Giant American Company," *ISMACS News*, No. 55 (April 1997) International Sewing Machine Collectors' Society, accessed March 3, 2016, http://ismacs.net/national/from_eldredge_to_national_to_janome.html.

10. "Long in Business Here; Then with the National 25 Years," *The Daily Republican* (Belvidere, IL) January 11, 1924.

11. "Pettit Memorial Chapel," *Wikipedia*, last revision February 4, 2016, https://en.wikipedia.org/w/index.php?title=Pettit_Memorial_Chapel&oldid=703226794.

Research Activities and News

Contributors this issue Mary Jane Dapkus (CT)

Column contributors may send information to RAN@nawcc.org.

Notes on Wooden Movement Tall Clockmaker John Rich (1763-1812) of Bristol, CT

Part 1 of 2: Lawsuits Involving George Mitchell & Co.

by Mary Jane Dapkus (CT)

This article documents two civil lawsuits involving John Rich (1763-1812), a little known wooden movement tall clockmaker of Bristol, CT, and a rather obscure Bristol firm, George Mitchell & Co. Extant records related to the lawsuits reveal an interesting story centered around Rich's dealings with the firm. However, Rich passed away before either case was resolved, which somewhat complicated matters for the courts and the administrators who were struggling to settle his estate in probate court.

Rich, said to have been one of Bristol's earliest clockmakers, was born in Farmington, CT, on November 14, 1763, the son of William and Mary Rich.¹ His death, at the age of 48, occurred at Bristol on February 1, 1812.² Among the possessions listed in the probate inventory of his estate were many wooden tall clock movements in progress, plus movement-making tools and equipment, lumber for clock parts, and more than 200 clock dials. Nonetheless, no examples of clocks either attributed to or signed by John Rich have been documented.³

George Mitchell (1774-1852), the principal partner in the firm of George Mitchell & Co., was a prominent Bristol merchant. Nonetheless, little is known about George Mitchell & Co., other than it was likely a trading firm established prior to 1809, and almost certainly not a clock manufacturing firm.⁴

The first of the two cases, *George Mitchell & Co. vs. John Rich*, commenced on February 20, 1811, when Roger Whittlesey, a justice of the peace, commanded the sheriff of Hartford County, CT, his deputy, or either of the constables of the town of Bristol, to attach Rich's "goods or estate . . . to the value of four hundred dollars."⁵ The sheriff was also directed to summon Rich to appear before Hartford County Court "on the fourth Tuesday of March 1811," to answer the complaint brought by George Mitchell, John S. Mitchell, and Samuel Dutton, all of Bristol, "late merchants in Company under the firm of George Mitchell & Co."⁶ According to the plaintiffs' declaration, defendant Rich had given the firm a note dated November 20, 1808, promising to pay it \$181.50 in 12 months "for value received."

Claiming \$250 in damages, the plaintiffs further stated that Rich had neglected to pay the debt. A deputy sheriff of Bristol went out, made the attachment, served the writ, and read the summons to Rich on February 21, 1811.⁸

On the designated fourth Tuesday of March in 1811, the plaintiffs and defendant appeared in court. Rich entered his plea, being "that he did not assume & promise in manner & form as the Plfs in their declaration have alleged & hereof puts himself on the Court for trial."⁹ On trial, however, the court decided in favor of the plaintiffs, awarding them \$250 plus the costs of the lawsuit.

Rich appealed the lower court's decision to the Hartford County Superior Court, which began hearing his appeal during its September 1811 term. A document found in the case file, dated February 24, 1812—about three weeks after Rich's death—described where the matter stood at that time. It is quoted in part as follows:

And whereas the Said John Rich between the session of Said Superior Court holden . . . in September AD 1811—and the session of Said Superior Court holden . . . in February AD 1812 deceased, And whereas Said Superior Court holden . . . on the second Tuesday in February AD 1812 upon suggestion that the Said John Rich had deceased as aforesaid further continued said case, to the Superior Court next to be holden at Hartford . . . in September AD 1812. That the said George Mitchell, John S. Mitchell, and Samuel Dutton might institute due process against the legal representatives of the Said John Rich deceased . . . And the Said George Mitchell, John S. Mitchell, Samuel Dutton say that the Said Rich his promise in Said note not regarding hath never while in life performed the same nor hath said note been at all paid by the representatives of the Said Rich since his decease.¹⁰

Subsequently, the Hartford County Superior Court summoned the administrators on Rich's probate estate, Austin Bishop and George Hitchcock (both also of Bris-

tol; apparently George Hitchcock was John Rich's son-in-law), to appear "on the first Tuesday in September AD 1812—Then and there to shew reason, if any they have why judgment should not be rendered by Said Court in favor of the plaintiffs against them the Said . . . Administrators upon the estate of Said Rich deceased for the amount of damages claimed."¹¹ However, the lawsuit was withdrawn during the court's September 1812 term.

On February 24, 1812, the same day that the Hartford County Superior Court issued the summons to Bishop and Hitchcock, the following notice appeared in the *Connecticut Mirror* newspaper:

The Honorable Court of Probate for the district of Farmington have assigned the first Monday of March next, at the office of the Judge of said Court at 2 o'clock, P.M. for the appointment of Commissioners on the estate of John Rich, late of Bristol, deceased, represented insolvent.

AUSTIN BISHOP,}

GEORGE HITCHCOCK,} Adm'rs.

Bristol, February 10.

That Rich's estate was "represented insolvent" was not previously known.

Meanwhile, on February 20, 1811, the same day George Mitchell & Co. initiated its lawsuit over the unpaid note, Rich initiated a counter lawsuit against the firm.

The following passage, taken from documents found in the case file of John Rich vs. George Mitchell & Co., sets out the nature of Rich's complaint:

To the Sheriff of the County of Hartford his Deputy or either Constable of the town of Bristol within said County . . . you are hereby commanded to attach the goods or estate of George Mitchell John S. Mitchell & Samuel Dutton all of said Bristol late merchants in C^o under the name & firm of George Mitchell and C^o to the value of two thousand dollars . . . & them have to appear before the County Court to be holden at Hartford . . . on the fourth Tuesday of March A.D. 1811 then & there to answer unto John Rich of said Bristol in a plea of the Case whereupon the Plf declares & says that on or about the first day of May A.D. 1808 at said Bristol the Plf bargained with the Def^{ts} to purchase of them a quantity of wooden Clocks as & for good Clocks well made & of good materials for eight dollars for each clock to be delivered to the Plf at diverse times then future & in pursuance of said bargain the Def^{ts} did at diverse times between the 1st day of May A.D. 1808 & the 1st day of June A.D. 1809 at s^d Bristol deliver to the Plf two hundred wooden Clocks as & for good Clocks well made & of good materials & the Plf paid the Def^{ts} therefor the sum of eight dollars for each of s^d Clocks & when the said

Clocks were delivered to the Plf as aforesaid the Def^{ts} in consideration of the premises did warrant the same to the Plf to be good Clocks well made well & of good materials & the Plf says that when the said Clocks were delivered as afores^d they were not good Clocks but were badly made & of bad materials so that they would not keep time all of which when the s^d Clocks were delivered as afores^d was well known to the Def^{ts} & by means of said bargain & warranty the Plf hath been deceived & defrauded to his damage the sum of one thousand & six hundred dollars & for the recovery thereof with just costs this suit is brought.¹²

Thus, at the same time George Mitchell & Co.'s lawsuit against Rich over the unpaid note was proceeding in the court system, Rich was also pursuing redress against the firm in the Hartford County Court for allegedly selling him faulty clocks.

Based on the information provided in the records of his case against George Mitchell & Co., between May 1, 1808, and May 31, 1809, Rich had purchased the 200 wooden clocks—apparently uncased tall clock movements with dials, weights, hands, and pendulums—from George Mitchell & Co., for the sum of \$8 apiece. It appears that all 200 of the movements were eventually delivered, and that Rich owed the firm a total of \$1,600, although the court documents do not describe his payment method or schedule. Consequently, although it is unclear whether the clock purchases and Rich's note to George Mitchell & Co. of November 20, 1808, were related, Rich gave the firm the note when he was taking delivery of the clocks, suggesting that the note was given in payment for a portion thereof. Furthermore, the court records demonstrate that Rich, evidently a clock-maker himself, "bought" movements in quantity—at least on this occasion—from another source, George Mitchell & Co., a firm not known to have produced its own clocks or movements.

The legal process on Rich's lawsuit against George Mitchell & Co. proceeded with the attachment on March 11, 1811, of "about 4 acres of land together with a dwelling house & barn standing thereon supposed to be the property of the Def^{ts} [Defendants] situate[d] in said Bristol it being the place where George Michell [sic.] & John S. Mitchell two of the Def^{ts} now live."¹³ The documents made no reference to any clock shop on the Mitchells' property.

Rich's case against George Mitchell & Co. continued before the December 1811 term of the Hartford County Court. The following passage, again taken from the case file, summarizes what happened:

This action was brought to the County Court holden at Hartford . . . on the 4th Tuesday of March . . . [1811] & by legal removes comes to this term The plaintiff appeared the defendants also appeared and the . . . testimony being ful-

ly heard thereon this Court find that the Defts did assume & promise as alledged in the declaration of the plaintiff whereupon it is considered by this Court that the Plf recover of the Defts one hundred twenty dollars damages and cost of suit allowed to be the sum of thirty one dollars fifty two Cents.¹⁴

The surviving records do not explain the court's rationale for awarding Rich only \$120 of the \$1,600 in damages he had been seeking for the 200 allegedly faulty clocks. However, although Rich was clearly unable to persuade the court that the clocks had been a total loss, the evidence suggests that, other than the note, he had paid most of what he owed George Mitchell & Co. for them. In any event, George Mitchell & Co. appealed from the court's judgment to the Hartford County Superior Court.

Due to Rich's intervening death on February 1, 1812, George Mitchell & Co.'s appeal went unresolved during the February 1812 term of the Hartford County Superior Court. The case was continued, with the administrators on Rich's probate estate now as the defendants, until the court's September 1812 term, when the parties failed to appear,¹⁵ thereby ending the case. Indeed, in their list of approved claims dated September 11, 1812, the commissioners on Rich's probate estate included the item: "To George Mitchell a bill of cost on account of a law suit which commenced before the death of the said decd [deceased] and settled by the Administrators."¹⁶ So the administrators apparently arrived at an agreement with George Mitchell & Co., and with the approval of the commissioners on the estate, the firm's court costs totaling \$22.96 were paid from the proceeds thereof.

The discovery of the court cases described above, revealing the identities of the partners in the firm of George Mitchell & Co., is particularly important because it corrects an error that has long stood as a roadblock in the path of a clearer understanding of certain aspects of the early nineteenth-century tall clock trade in Bristol, CT.

Author's note: Part 2 will elaborate on this matter and will further examine the evidence of clock making in the probate records of Rich's estate.

References and Notes

1. Penrose Hoopes, *Connecticut Clockmakers of the Eighteenth Century* (Hartford, CT: Edwin Valentine Mitchell, 1930), 107. According to this source, the earliest Bristol

clockmaker was probably Gideon Roberts Sr. Furthermore, the town of Bristol was formed from the New Cambridge and West Britain Ecclesiastical Societies, which separated from the town of Farmington in 1785. See Arthur H. Hughes and Morse S. Allen, *Connecticut Place Names* (Hartford, CT: Connecticut Historical Society, 1976).

2. The cemetery inscription data provided in the Connecticut State Library Death Index shows that John Rich passed away on February 1, 1812. However, the obituary that appeared in the February 12, 1812, edition of the *American Mercury* newspaper stated that he died on February 3. The newspaper was published in Hartford, CT, from 1784 to 1833, according to Columbia University's database on newspapers at <https://clio.columbia.edu/catalog/6086129?counter=1>, accessed August 10, 2016.

3. Philip E. Morris Jr., *American Wooden Movement Tall Clocks 1712-1835* (Hoover, AL: Heritage Park Publishing, 2011), 208 and 448.

4. Sonya L. Spittler, Thomas J. Spittler, and Chris H. Bailey, *American Clockmakers & Watchmakers by Name & by Place* (Columbia, PA: National Association of Watch and Clock Collectors, Inc., 2011).

5. The court records cited in this article for George Mitchell & Co. vs. John Rich, which was filed with Hartford County Superior Court, were found in Box 49, RG3, in the Connecticut State Library in Hartford, CT. The original spellings and superscripted letters were retained.

6. Ibid.

7. Ibid.

8. Ibid.

9. Ibid.

11. Ibid.

11. Ibid.

12. The court records cited in this article for John Rich vs. George Mitchell & Co., which was filed with Hartford County Superior Court, were found in Box 49, RG3, in the Connecticut State Library in Hartford, CT. The original spellings and superscripted letters were retained.

13. Ibid.

14. Ibid.

15. Ibid.

16. The estate papers cited in this article for John Rich, which were filed with the Farmington District Probate Court, were found in the Connecticut State Library in Hartford, CT.

From Our Archives

Column by Kate Van Riper, Archivist

This occasional feature presents information discovered in the archives at the NAWCC Library and Research Center.

Watchmaker Describes Frenzy at Outbreak of WWI

In the summer of 1914 American watchmaker John J. Bowman visited Europe to tour watch factories and research the history of watchmaking. At first dismissive of the political unrest in Europe at the time, he “didn’t concern [himself] about the international troubles which were brewing, [and] went about [his] own business.” However, in early August, just over a month after the assassination of Archduke Franz Ferdinand of Austria, Bowman was there to witness these early days of what would be known as World War I.

He documented his observations in several typed pages that were recently found in one of the archive collections in the Library and Research Center (LARC). The John J. Bowman Collection primarily contains documents related to the Bowman Technical School, a watch repair school that was in Lancaster, PA. However, buried in the collection, in a section that was labeled “Non-Horological Interests,” were a number of pages that contained Bowman’s recollections of the atmosphere during those early weeks of the war.

Often, you hear about how people celebrated the outbreak of World War I—political tensions were so high that war came as a relief. Bowman echoes these sentiments in his observations of a “frenzied people” on the night the news broke that Germany had declared war on Russia.

During the early hours of August 2, 1914, Bowman was in Berne, a city in Switzerland. He woke to find “the street, as far as [he] could see by the light from street-lamps . . . was densely packed by masses of people, evidently intensely excited.” Bowman wrote:

I need hardly say that I dressed and went down to the street. The recollection of the scenes there is to this day a picture in very vivid colors. Men were handing newspapers out from windows of the printing office; the dense crowd was insatiable for the news; at these windows it suggested the throwing of meat to hungry wolves; people fairly climbed over each other to reach the papers. Those who were lucky enough to be supplied were naturally pushed away from the newspaper building into the crowd; each had an eager audience who was willing to read aloud. One man climbed up a lamp post and, hanging there, read to the straining faces turned upward in the circle of greenish light shed by the lamp.

Quickly following this night, Bowman boarded a

train to Paris. After many delays, he finally found his way to a hotel near the Musée du Louvre, from which he witnessed the French response to the declaration of war. Bowman wrote about the destruction of storefronts that were perhaps considered too German now that the war had broken out:

Near by was a restaurant which had the well known Appendrodt [Austrian] name on its sign and the whole front smashed in and the interior fairly ‘cleaned out’. . . and some days later [I] bought a post-card view of the wreckage at this place, and saw many other smashed stores and restaurants with German names in their signs.

Along with this destruction of property, Bowman also wrote about the desire of the French people to regain Alsace Lorraine, an area of northeast France that had been taken by Germany after the Franco-Prussian war in 1871. He observed:

I gathered the impression from conversations that the burning desire of most of the people was to redeem 1871; to show the world that France is still a nation of great soldiers, and to humiliate Germany in return for Germany’s former humiliation of France.

In contrast to the excited crowd he witnessed in Switzerland, here Bowman notes the “extreme order and sobriety of these French men going to war.” He wrote about their excitement and expectations to regain what was lost after 1871 and bring glory to France.

Moving on from Paris, Bowman described his experiences in England and of the spread of news and rumors, particularly those he referred to as the Belgian Atrocities, also known as German Atrocities. In August 1914 Germany invaded Belgium as it marched toward France and what would be known as the Western Front. While in Belgium, the German troops committed a series of war crimes that included the massacres of thousands.

It is clear from Bowman’s tone that he doubted the veracity of the accounts coming out of Belgium and seemed to believe that these acts were a complete fabrication of British propaganda to encourage enlistment and pro-war sentiment. While these atrocities were undoubtedly used for propaganda purposes—and exaggerated for such purposes—these atrocities still happened.

In his account, Bowman mentioned a man who had been in Louvain, as it was known then—now known as Leuven—in Belgium. Bowman wrote that the man

(Mention the "at the front" books so prevalent now). We all have read the experiences of soldiers telling the horrible truth about war, at the front, after experiencing the miracle of living through it to return home. What I have determined to attempt is to make some sort of record of the horrors of war as they exist at home, away from the screaming shells, the ripping baronets, the filth and the desolation of the battlefield. I am content for the task in hand: I was not at the front - my experiences were at home. To crude or thoughtless minds the idea that there could have been anything disturbing to anyone's tranquillity in what went on thousands of miles from the fighting lines is perhaps strange. I may as well say in beginning that it is not expected that such minds will be much impressed; but I am very sure that what is here set down will be considered worth thinking about by whoever is capable of rising in thought above mere physical safety, comfort and pleasure.

At about an hour past midnight of August second, 1914, I was awakened in my room in the Hotel Lotschberg in Berne, Switzerland, by a strange noise like the roar of a fire or a distant explosion: a murmurous sound, but yet deep and loud enough to make me rise instantly to investigate it. I went to the open window below the street, as far as I could see by the light from street-lamps and from many lighted windows, was densely packed by masses of people, evidently intensely excited, the blending of whose voices made the strange sound that had roused me from my customary sound sleep. This sound did not continue of the same volume, but of irregular intervals, / / rose and fell, like the surf of a distant sea, except that the beats were not rhythmic, but irregular. / / First of all the murmur died down / / Between the crescendos, when the sound died down somewhat, a metallic clanking was heard, coming from covered windows in a building across the street from the hotel. What caused the clanking was soon made plain when this, coming out of a doorway with bundles of newspapers, were set upon before falling on the street, and it could more truthfully be said that they were striding of their papers than that the papers were sold to the frenzied people.

I need hardly say that I tried to get down to the street. The recollection of the scenes there is to this day a picture in very vivid colors. Men were handing newspapers out from windows of the printing office; the dense crowd was insatiable for the news; at these windows it suggested the throwing of meat to hungry wolves; people fairly climbed over each other to reach the papers. Those who were lucky enough to be surfeited were naturally pushed away from the newspaper building into the crowd; each had an eager audience who was willing to read aloud. One man climbed up a lamp post, hanging there, read to the circle of straining faces turned upward in the circle of greenish light shed by the lamp.

Being one of those who can extract the meaning from German or French reading matter, but unable to follow rapid conversation in those tongues (and it was rapid that night), I had to wait until one of the papers could be obtained before learning much; but of course I guessed the meaning of the stir as soon as I was awakened. It was the beginning of the World War. What seemed of most direct interest to these Germans was the announcement of the mobilization of their own military forces. The announcement of mobilization was an article of importance, which to most in such, were indeed, a great deal, even a far greater, as I was, would be the expression of the intense excitement which radiated from everyone. It never occurred to me to return to my room and to bed. The first opportunity to observe the psychology of a people going to war had quite unexpectedly fallen to me. The first day of the war. The much greater mobilization which I was to witness for ten a fortnight from that night, in France,

One-page typed by John J. Bowman recalls the night World War I broke out in Europe. COURTESY OF THE JOHN J. BOWMAN COLLECTION, 1904-1991/NAWCC LIBRARY AND RESEARCH CENTER.

"didn't include anything startling in what he said about Louvain," but after several days he began to embellish his story immensely. This experience seemed to cause Bowman to doubt this man entirely and attribute all his reminiscences to falsehoods and being swept up in the moment of storytelling. However, on August 25, 1914, German troops burned the university library in Louvain and massacred 248 Belgian civilians. This man may have witnessed this event.

Archives can hold many hidden treasures, and it's always exciting to find something as unique and interest-

ing as these recollections. Firsthand accounts, such as these written by Bowman, and show how real people witnessed great moments in history.

About the Author

Kate Van Riper is the archivist at the NAWCC Library and Research Center in Columbia, PA. She has a BA in European cultural studies and philosophy from the American University of Paris, and a master's in library and information science from Rutgers, the State University of New Jersey.

The Answer Box

With Answer Box Volunteer Lee Davis, Charles E. Davis, and Ed Ueberall

Do you have a question about a particular clock, watch, tool, or other horological item? The Answer Box is a great resource for NAWCC members. We use the expertise of a diverse group of specialists who are willing to provide you with the information you need. Sometimes research is required, and this takes time, but we will provide you with answers as quickly as possible.

How to contact us: Please include your membership number and an SASE and mail to NAWCC Publications Department Q&A, 514 Poplar St., Columbia, PA 17512-2130, or email answerbox2@nawcc.org.

What to include: Supply as many details as possible. If appropriate, give all of the markings that appear on the movement and the case. Send photos and include close-ups and full-figure views. All material must be clear and legible for an accurate study. Please limit each letter to one question because questions may be redirected to different specialists. Photographs will not be returned and will become the property of the NAWCC.

Photographs: Photographs must be clear and may be sent as prints or digital files, preferably. Please send only the highest-quality digital images available—300 dpi or better.

Chauncey Jerome

From J.P.

I have a Chauncey Jerome, iron drum remote fusee, 30-hour, time-and-strike clock in an oversized sharp gothic (steeple).

I have been able to find only these references of a clock with this type of movement

- Ken Roberts, *The Contributions of Joseph Ives to Connecticut Clock Technology 1810 - 1862* (Bristol, CT: American Clock & Watch Museum, 1970): 261-262

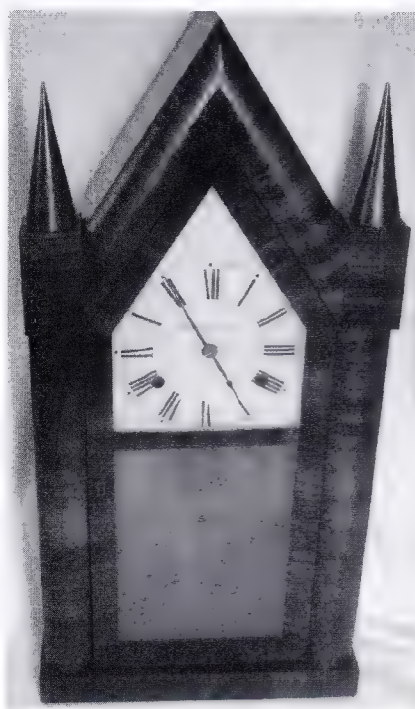
- D. H. Shaffer, *A Survey History of the American Spring Driven Clock 1840-1860* (NAWCC Bulletin Supplement, No. 9, Winter 1973): 40, Figure 29

- Chris H. Bailey, *From Rags to Riches to Rags: The Story of Chauncey Jerome* (NAWCC Bulletin Supplement No. 15, Spring, 1986): 78, Figures 153 and 154

I refer to these authors in my question by their last names.

Bill Mather from whom I purchased my clock on June 18, 1982, told me it belonged to Ken Roberts and was in his private collection. The small piece of over paste label still visible on the words "IMPROVED" and "CHAUNCEY" seem to be a match for the picture of the clock in Figure 89 in Roberts and for the picture of the clock in Figure 154 in Bailey.

The clock picture used in Bailey states it was from the Edward Ingra-



ham Library. I do not know when that photograph was taken, but the article was published in Spring 1986—after I bought my clock on June 18, 1982. The clock appears to be the same as the one in Roberts's. Compare the part of the over paste covering the part of the letters "PR" from "IMPROVED," "UN" from "CHAUNCEY," and part of the "Y" from "CHAUNCEY." It would seem that these two clocks are the same.

Shaffer's clock in Figure 29 could be the same clock, but this is hard to determine from the image, and I do not

know the source. My questions are (1) how many of these clocks were produced and still exist? and (2) is this a one-of-a-kind clock?

I have never seen a clock with this movement for sale on the Internet and in auction notices.

I have included many photographs and the following detailed description of this clock:

- Chauncey Jerome, remote double fusee, with iron spools, 30-hour, time-and-strike, oversized sharp gothic (steeple)

- You can see this exact clock with pictures and descriptions in Roberts on page 261 in Figure 89.

- Clock from Roberts's collection

- Mahogany veneer case

- Conical finials

- Zinc dial signed "Chauncey Jerome, New Haven, Conn"

- Spade and spike hands

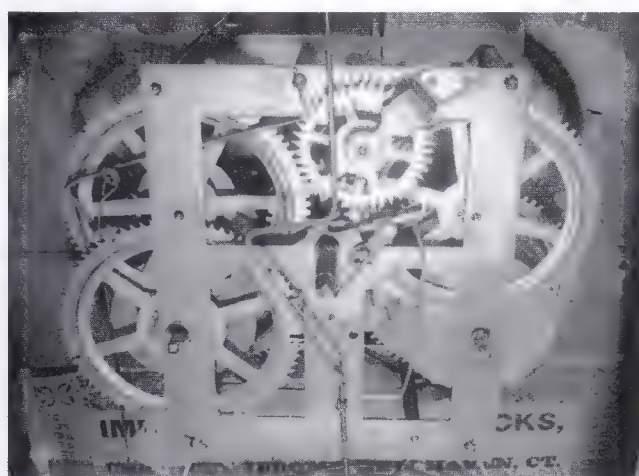
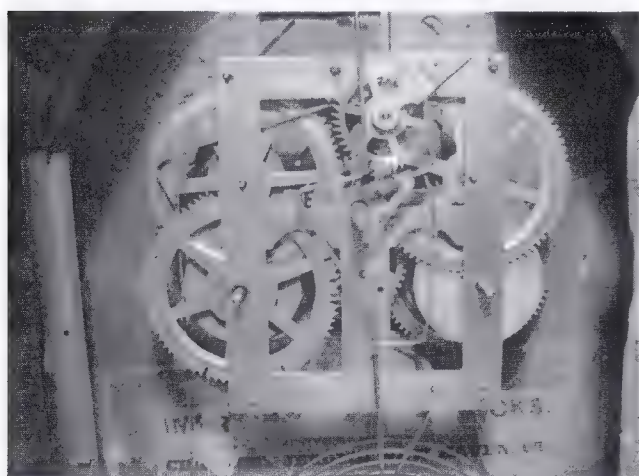
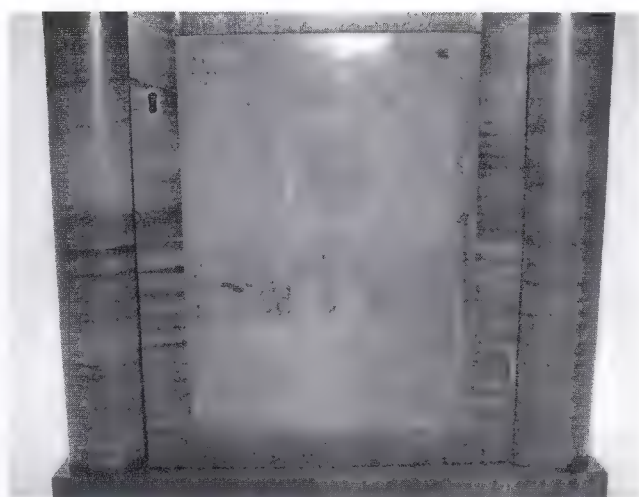
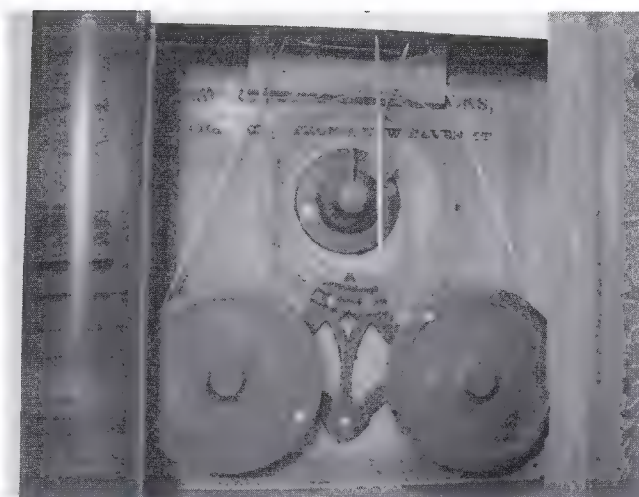
- Brass movement die-stamped "Chauncey Jerome, New Haven, Conn, U.S.A."

- Paper label: "improved spring clocks / manufactured and sold by / chauncey jerome, new haven, ct"

- Tablet: reverse painting.

I would appreciate any information you could provide. Thanks.

J. P.'s references produced more questions than answers. The second edition of Roberts's book on Ives—the one available—does not correspond with J. P.'s citation. The only photo reference to the clock I can



locate is on page 306 and appears to be one of the same photos that appears in Bailey's book. This supposition is bolstered by J. P.'s observation that the photo in Bailey's book appeared four years after J. P. bought the clock. Roberts cites the clock in text on page 298 but only describes its wheel count and label, without offering any proof of authenticity.

The most helpful comment from Bailey's book is the notation that the dial is an obvious replacement. The photo in Shaffer's supplement is too poor to provide any help, and the explanatory notes under the photograph do not correspond to the photo.

Thus, the help provided by the references is visual comparison to what appears to be the same clock used by

two authors and the notation that the dial is a replacement.

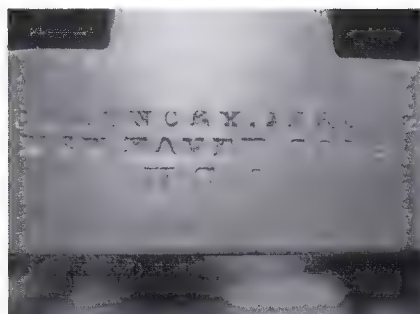
J. P.'s clock and the one pictured in Roberts and Bailey appear to be the same case. This supposition is bolstered by J. P.'s comment that when he bought the clock it was reputed to be from Roberts's collection. There are also the visual references (e.g., the remnants of a small over paste label) that are identical.

The label and remote iron winding drums that must also contain the mainsprings appear to be the same ones in both the photos and J. P.'s clock. J. P. identifies the clock as a 30-hour. I do not know if this is based on his running of the clock, an examination of the springs, or because the upper unit is a 30-hour ogee movement. The winding

drums appear to be deep enough to house 8-day springs, but J. P. may have examined them and found they are indeed 30-hour springs.

This is the only example of this label I've observed either in the oversized case or other cases. What's been observed in this oversized case are labels with the 30-hour and 8-day fusee models that resemble those illustrated in Bailey's book (Figure 152 on page 77) or a blue label with an early version of Jerome's more conventional 8-day movement, which is described on this label as a "4-day" movement.

Besides the apparent uniqueness of the label is the absence of any further identifying information. It does not mention "equalizing power," which was used to reference fusee



movements, and it does not mention duration of 30-hour or 8-day or whether there are steel or brass springs.

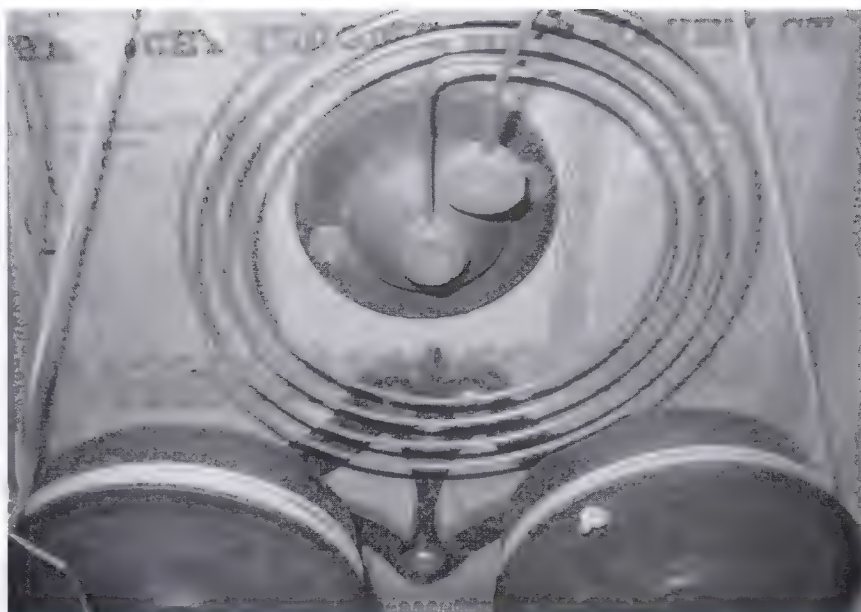
In short, the label is original but provides no information to authenticate or describe what the clock actually was and thus does not give any guide as to what the upper movement should be.

Whether this movement is original to the case, whether it's a replacement that duplicates what was originally in the clock, or whether it's a complete replacement cannot be determined from either the photographs or the references.

What's visible on the backboard are many extra holes, a gouged space above the top edge of the movement, a set of parallel pencil lines near the bottom of the movement that could indicate placement of a seat board, and several other indentations and scrapings. All of the above are often indications that a different movement, or several different movements, have been in a case.

The mounting blocks in J. P.'s photographs and in the references appear to be newer than the case. The wood does not show evidence of oxidizing, and the bottom one indicates no staining, which is often the case from excess lubrication trickling down from the movement after decades of oiling the movement.

It could be either that the original blocks were rotted or otherwise unusable and new ones were needed or that a replacement movement required new mounting blocks.



The movement itself raises several questions. The movement in J. P.'s clock may not be the same one that is in the references. What appear to be different are the very evident winding drums in J. P.'s movement. It is impossible to tell from the photographs whether they are conical drums, which would provide a fusee function, or just spools to reduce the amount of winding necessary to spool all the cord from the remote oversized iron drums. It would take several full turns on the winding

drums just to unspool one full rotation from the remote drums that wind the springs just one full turn.

Whatever the case, the drums in the movement appear to be wood and are also light in color, similar to the color of the mounting blocks. That may indicate relative newness.

While the angle from which J. P.'s photographs were taken varies from the angle of the photograph in the references, it is difficult to discern the same winding drums in the photographs in the references. The

drums in J. P.'s images are evident and obscure the view of wheels at the back of the movement. Those wheels are clearly visible in the photograph in the references, and no winding drums are evident.

Another unusual characteristic of the movements in the reference and J. P.'s images is the position of the crutch. In other applications in which Jerome mounted the suspension spring on the case high above the verge, the crutch extends upward. In this case, the crutch extends downward, engaging the pendulum rod very close to the pendulum, which would cause the verge to

rock enough to drive the palette faces so deeply into the escape wheel that it would likely impede proper operation.

So, for the movement, it is impossible to authenticate that this is the movement, or even the type of movement, that was originally installed in this case. This seems to be the only example of such a clock, so none other is available for comparison.

Even further, it is not possible from the photographs to be sure that the movement in the clock in the photo references is the same one now in the clock. It appears that ei-

ther winding drums or fusee spools are in J. P.'s movement, but they are not in the movement while the clock was in Roberts's possession.

Consistent with the possibility that the movement is a replacement is the new dial. The original dial may have been lost, or a new dial had to be fabricated to accommodate a different movement.

This is an intriguing clock but with the available information, it is impossible to discern whether it is authentic or nicely restored remnants that raise even more intriguing speculation.

—Lee Davis (PA)

Seikosha Dial Gallery Clock

From H. P.

Any historical information that you can provide about this Seikosha 11½" dial gallery clock would be appreciated. The dial is labeled with Seikosha trademark S in a diamond and outer circle with "made in Seikosha, Tokyo, Japan." The trademark is also stamped on the front plate.

The American-style movement is unusual in that the escape wheel is mounted outside the backplate with the verge upside down. There is also a slot cut in the top right-hand corner of the backplate for deepthning the strike fly.

The suspension and pendulum rod hangs on a bracket at the top rear of the case. A ¾" silvered disk is attached to the pendulum rod and is visible through a hole in the dial above the 6, to indicate the clock is running.

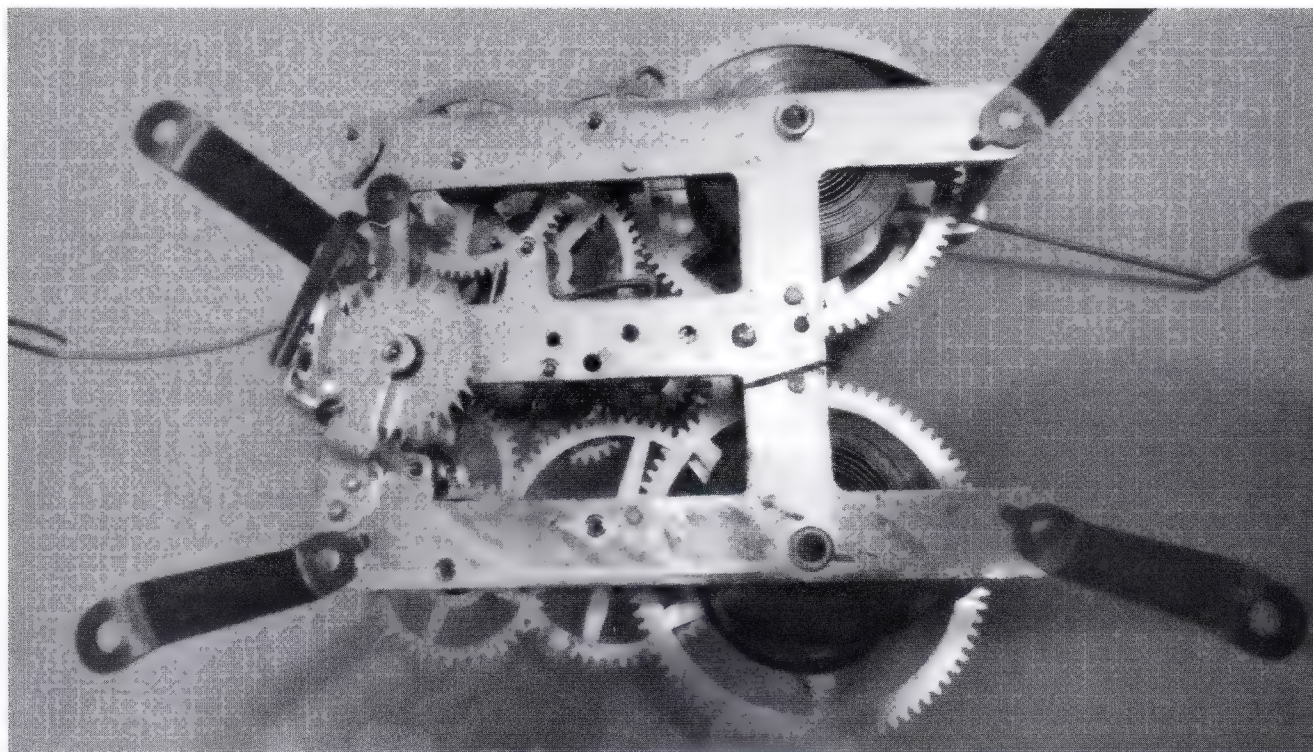
You can find a good history of Seikosha in Hoshimi Uchida's *Evolution of Seiko 1892-1923* (Tokyo: Hattori Seiko Corp., 2000) in the NAWCC Library and Research Center. It is one of three volumes containing English translations of some material from Uchida's *History of the Japanese Clock and Watch Industry* (Tokyo: Hattori Seiko Corp., 1986). This was commissioned by the Seiko Institute of Horology for the 100th anniversary of the founding



of Seikosha by Kintaro Hattori in 1892. The volume titled *Evolution of Seiko 1892-1923* provides great coverage about the background of the subject clock. Hattori was one of the early Japanese importers of American clocks to progress into domestic clock production and soon became the largest. Two other chapters were

translated and made into books by Uchida: *Osaka Watch Incorporated 1889-1902* (Tokyo: Hattori Seiko Co., 1986) and *Wall Clocks of Nagoya 1885-1925* (Tokyo: Hattori Seiko Co., 1987).

Japan had an interesting time-keeping system until two decades after Emperor Meiji, who through



the “urging” of US military might opened Japan in 1854 to foreign trade. It had been very much a closed society and had not gone through the Industrial Revolution, so its needs were pretty basic. Sunrise and sunset gave the standards of the length of the day and night. Of course, counted by oscillations, it meant summer days had long hours and short night hours; this changed almost daily as the slanted earth moved in its orbit. Even without the advances of the Industrial Revolution, Japanese craftsmen built clocks to measure and display these changing hours. Unfortunately, only the rulers, clergy, and some landowners could afford them.

Emperor Meiji joined the rest of the world 21 years later, with a standard for the length of seconds, minutes, hours, days, and years. Unfortunately, the Japanese had to slip in an extra day every so often and another second when they decided it was messed up.

Cheap clocks were essential to cope with this new industrial way

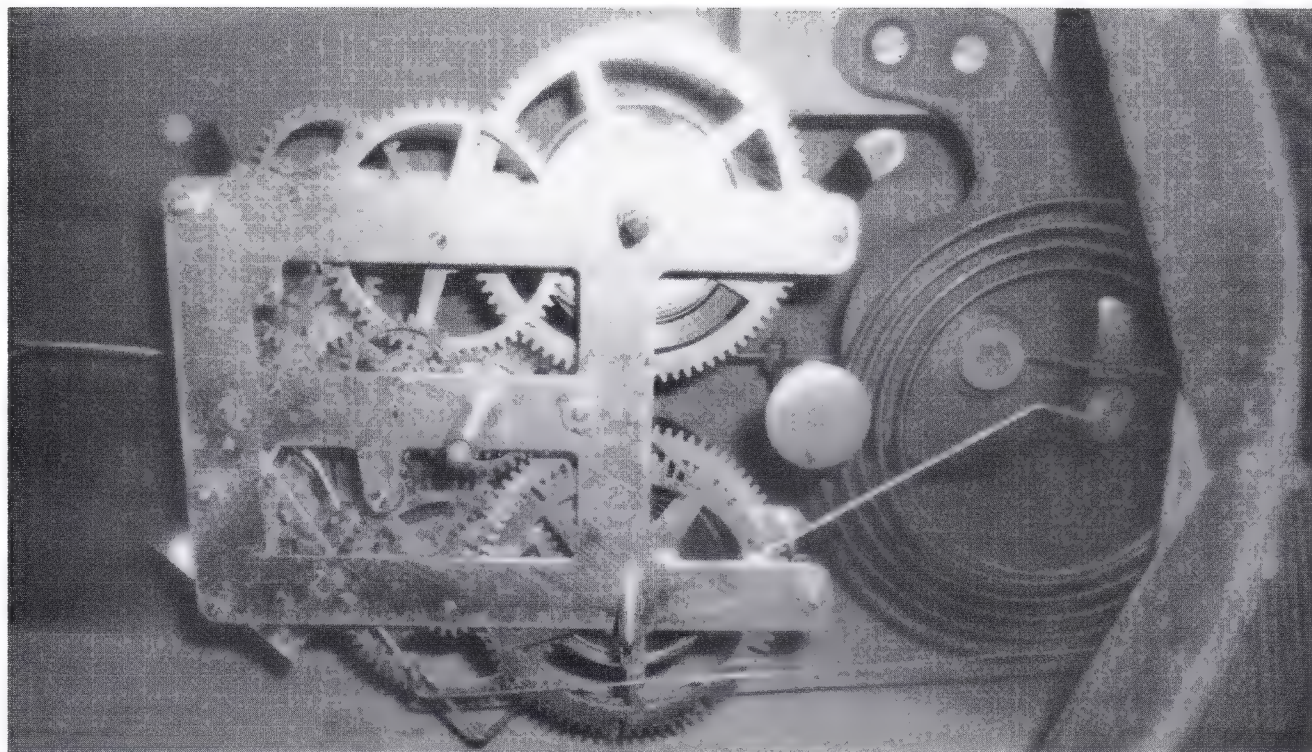
of living. Fortunately, New England clockmakers had pioneered making such a clock for the lowest price. Local business people started to import them to Japan. For ten years this worked great and Connecticut clockmakers were humming. By this time the importers saw that local craftsmen could also operate the same machines that the rest of the world was using to make clocks, so the importers gradually opened their own plants and the market dropped off for the imports. Within ten years local production had satisfied the need, and they started to export to the other parts of Asia. This movement was the first semi-precision manufacturing in Japan, and some of those companies went on to help build the industrial nation we see now.

The Japanese manufacturers kept the style perfected by the New England clockmakers during the last half of the 1800s. This featured an easily manufactured inexpensive clock made to give good service until it wears itself out. It

could be mass-produced, requiring only semi-precision techniques and equipment. It also had a basic movement that could be used in many case styles. The main factor allowing this was placing the escape wheel and a matching verge on the outside of the movement.

In the subject Seikosha clock this was exploited to the fullest by allowing a long pendulum and having it mounted on the top and back of the case. The verge mounting allowed the crutch to impulse the pendulum at the most efficient point. A false bob on the pendulum rod showing through a peephole was helpful in checking the performance of the clock when questions arose. Only the holes for the center arbor needed changing, allowing the switching of the front and backplate.

The case appears to be made from a favorite furniture wood in Japan, Zelkova wood, which offers a great grain pattern and a substantial case. Most other cases will be made of softwood with a grained finish applied or painted in a solid color.



The style of the Arabic numbers on the dial would probably indicate mid-1920s or later.

You have a well-made clock by a highly recognized Japanese manufacturer, and it appears to be in good condition. It has some neat features not seen in most clocks that set it apart from most Japanese clocks.

—Charlie E. Davis (CA)

New Verge Fusee Chain

From: R. C. M.

How do you place a new verge fusee chain in the verge fusee movement when the old chain is broken and you want to replace it? Are there books or other sources of information on this item? Where can I get a strike bell for a verge fusee repeater bell strike? Also, can it be easily made and if so, how do I do it?

Are there any watchmakers or other repairers who can fix a jump seconds gear pinion (4th wheel-2nd wheel) that was broken off? The pinion shaft (about 2 mm, or 0.07 inches) broke off the hub, which sits atop the jump seconds cross. This is a scarce split sec-

onds, jump seconds pocket watch chronograph. Can you provide some names of people who might do this work?

Let me see if I can provide a little information to help, although fusee watches are not one of my main areas of expertise.

If the original chain is in good shape but is just broken, it is often quicker and easier to make a new rivet to reattach the chain pieces together than to try to find a suitable replacement chain.

To replace a fusee chain, start with checking that the replacement chain:

- Is long enough to fully fit onto the fusee wheel with some left over to remain on the barrel
- Is narrow enough to fit between the flanges on the fusee wheel
- Is well lubricated and will flex easily
- Has proper hooks that will fit securely into the fusee wheel and the mainspring barrel.

To install, immobilize the gear train and then attach the fusee

wheel hook to the fusee.

Next, keeping the chain inside the pillar posts and making sure that there are no loops in the chain, attach the chain to the barrel.

Keeping light finger pressure on the barrel and chain, slowly wind the chain onto the barrel, using a watch key on the barrel arbor.

The chain should wind evenly across the barrel, and when the chain is tight, put a little extra tension on the mainspring arbor and set the arbor click to keep the chain tight.

The chain should be even and has not slipped off the barrel. Then add about a half turn of wind to the arbor and reset the click.

I am not familiar with the construction of a repeat bell on verge movements. I'm sorry.

For the repair of the quarter jump second pinion, watchmakers can be found at the NAWCC at www.nawcc.org and at the American Watchmakers-Clockmakers Institute at www.awci.org.

—Ed Ueberall (GA)

A Special Interest

This occasional feature showcases the unique contributions of the Special Interest Chapters. This article was featured in the June 2016 newsletter for the Horology in Art Chapter 195. For more information about the Chapter and how to join, please visit <http://community.nawcc.org/chapter120/home>.

A Look at Stenciled Clock Splats

by Lee H. Davis, *FNAWCC (PA)

The origination of stenciling as a decorative art form has been lost in the mists of antiquity, having most likely begun in Asia or perhaps even in Europe, and possibly applied to metal trays.¹

The appeal of the surfaces of columns and splats became advantageous with the introduction of shelf clocks in America. As shelf clock production increased into the mid- to late 1820s, case styles incorporated columns and splats rather than pillars and scrolls. The surfaces of the former could be decorated quickly, efficiently, and colorfully to display decoration, which could have helped their sales appeal (Figure 1).

Thus, by the 1830s dozens of clockmakers and clock factories, especially in and around Bristol, CT, were employing artists who could deftly apply stenciled designs on clock tablets, columns, and splats. Dozens of designs are known to exist and have been created with bronze powders not only on clocks but all types of furniture, trays, boxes, chairs, and pianos, among other items (Figure 2). Stencils were also applied to walls and floors, but these were mostly done with paint, not bronze powders as on clocks.

What is bronze powder stenciling? This is the art of applying finely ground metallic powders through openings in patterns made of fine rag paper or starched linen, such as architects used, into barely tacky varnish. When removed, the powder remains embedded in the varnish, or in some instances shellac, in the form of the stencil's design, such as a leaf, a melon, a grape, or an animal.

As clockmakers increased production of shelf clocks in the late 1820s and into the 1830s, stencil decoration on clock cases, splats, and columns increased in popularity, and hundreds of clocks were made with this art form.²

The art of stenciling is fairly easy and little formal art training is needed to achieve good results. Connecticut clockmakers employed teenage girls in this line of work. Some designs used by clock artists may have been "borrowed" or improvised from extant designs on European works or were possibly taken from extant American furniture with stenciled work.³ William Fenn is a well-known American artist who specialized in clock



Figure 1. Mark Leavenworth 30-hour wood movement clock, ca. 1832. Original stenciling on the splat, columns, and tablet. This same tablet design has also been observed on a Riley Whiting clock and was probably done by the same artist.

tablets and stencil designs and who originated dozens of designs used on American clocks.⁴

Splats slated to receive stencil designs needed to be sanded smooth followed by the application of a coat of black paint. When dry, a coat or two of varnish or shellac was applied—maybe more, depending on the grain and pores of the wood—and then a final coat was put on and allowed to come to a barely tacky stage. This stage depended on the thickness of the coat, the humidity, the smoothness of the wood, the temperature,

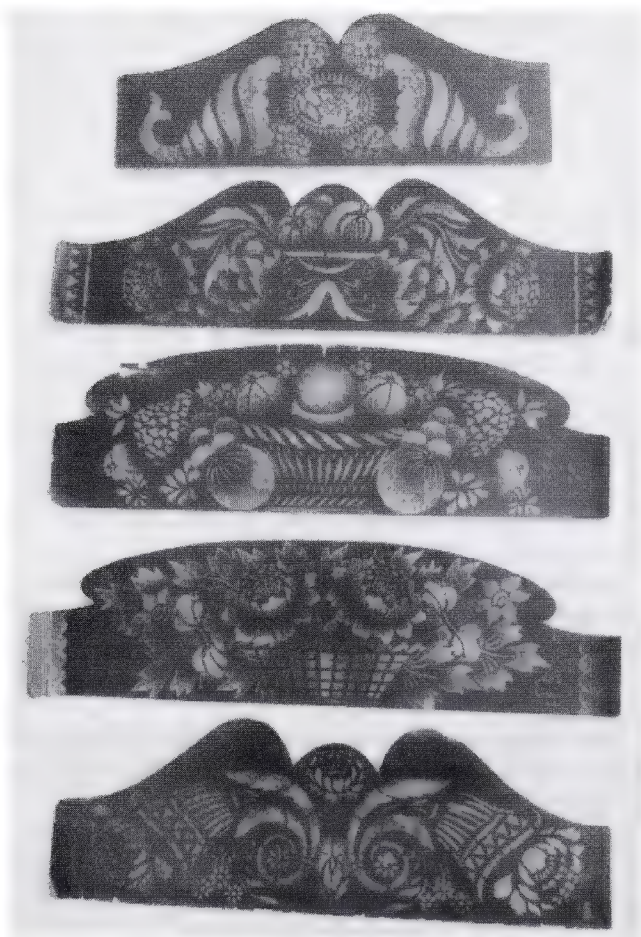


Figure 2. Clockmakers of the era often used several designs, probably depending on the suppliers. From the top these splats were designed by Daniel Pratt Jr., Eli Terry Jr., Atkins and Downs, Seth Thomas, and C. & L. C. Ives.

and the type of brush used in the application.

When the varnish or shellac was set to a just barely perceptible tackiness, the stencil units were applied one at a time in a sequence, which allowed a design to be built, such as an overflowing bowl of fruit with melons, leaves, and grapes. The varnish we use today for this type of stenciling will usually hold a good tack for about an hour once the desirable stage is reached. If it dries too much, then another session is needed at least a day later after the first varnish application has set well.

Shading with stencils and bronzing powders is achieved by wrapping a piece of high-grade velvet⁵ around the index finger and dipping into a thin coat of loose powder. The powder is then carried to the stencil, which has been placed onto the tacky varnish and gently pushed down to seal the edges. A gentle circular motion with the velvet is then done with the heaviest concentration of powder applied where the greatest light would be on the melon, leaf, grape, or other figure. By bleeding off the powder further and further into the stencil unit, gentle shading is done, which gives a look

of depth and an airbrushed artwork impression.

Materials recommended for this work include an Exacto knife with a No. 16 blade; Higgins India Ink and a Hunt Crow Quill pen for tracing designs; clear acetate; architect's tracing linen for retracing and making the stencils; McCloskey's Marine Spar Varnish or Helmsman by Minwax; a piece of thick glass for cutting the stencils on; a good quality natural brush for varnish application; a small piece of high-grade silk-backed velvet; several shades of bronzing powders; mineral spirits for cleaning the brush and stencils (do not use water; it will dissolve the starch in the linen); some soft rags for cleaning; and of course, the object to be stenciled.

Study original designs carefully and photograph them if possible. Try to imagine the various units the original artist used to build the design and note those units that may have been repeated and even reversed for symmetry—if any. Achieve complex shading and effects by numerous stencil units, different shades of powders, and skillful application for increased depth and realism; with some practice you will be amazed at your rapidly increasing skills.

About the Author

Lee Davis joined the NAWCC in 1966. He has written several articles for the *NAWCC Bulletin* and the *Watch & Clock Bulletin* and is the author of *The Greek Revival Influence on American Clock Case Design and Empire Clock Case Development*.⁶ *NAWCC Bulletin* Supplement No. 18 (Spring 1991).

Davis was a National director from 1985 to 1989, acting executive director in 1988 and 2001, and acting *NAWCC Bulletin* editor in 1988, and is a current member of the Nominating and Elections Committee.

He was the recipient of the James W. Gibbs Literary Award in 2003, and the Dana Blackwell Award for Excellence in Clocks in 2001.

He is a past committee chair of the Headquarters Committee, former Editorial Committee member, and past part-time instructor in reverse painting on glass at the School of Horology.

In addition, Davis is active in several Chapters and is currently vice president of the Old Timers and Fellows Chapter 22, treasurer of Keystone Chapter 158, and president of the Horological Art Chapter 120.

Notes

1. Esther Stevens Brazar, *Early American Decoration: A Comprehensive Treatise Revealing the Technique Involved in the Art of Early American Decoration of Furniture, Walls, Tinware, Etc.* 4th ed. (Springfield, MA: Pond-Ekberg Co., 1961). It was her belief that stenciling may have started in the Orient.

2. See the books and articles listed in the references by Chris Bailey, Brooks Palmer, and Kenneth D. Roberts for illustrations of clocks with stenciled splats.



Figure 3. Some stencils had more units and greater detail emphasized by delicate shading, which imparted a more dimensional appearance, like the top slat, which took at least 10 different stencils and attention to shading and symmetry. From the top these splats were designed by Seth Thomas, Henry Terry, Eli Terry Jr., Boardman and Wells, and C. & L. C. Ives.

3. Theodore Hodges, *Erastus Hodges 1782-1847, Connecticut Manufacturer, Merchant, Entrepreneur*, Special Publication No. 3 (Columbia, PA: National Association of Watch and Clock Collectors, Inc., 1994): 123-124. Erastus Hodges was known to have contracted with several young women to paint tablets and dials for his clocks—and probably stencil splats in addition. Among these women were Electra Loomis, Hannah Beach, Charlotte Colt, and Mary Leach.

4. William Fenn's greatest contribution to the American clock industry was probably his wonderful clock tablet stencils. He may also have done many columns

and splats. See Lucinda Burleigh Servino's article titled "William Bennet Fenn's Clock Glasses," *NAWCC Bulletin*, No. 240 (February 1986); Chris H. Bailey's *More Clock Decorating Stencils of Mid-19th Century Connecticut*. Bristol, CT: American Clock & Watch Museum, 1994; and William B. Fenn's *Clock Decorating Stencils of Mid-19th Century Connecticut*. Bristol, CT: American Clock & Watch Museum, 1984.

5. In the 1830s a soft animal skin was often used.

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Horologica

Contributors this issue Fortunat Mueller-Maerki, FNAWCC

Share reviews and announcements of new and interesting books, websites, digital media programs, periodicals, exhibits, and all else pertaining to horology. Send contributions to Editor Therese Umerlik at tumerlik@nawcc.org or mail to NAWCC, Inc., Publications Department, 514 Poplar St., Columbia, PA 17512-2130.

In-depth Look at One of England's Leading Clockmakers of the Golden Age

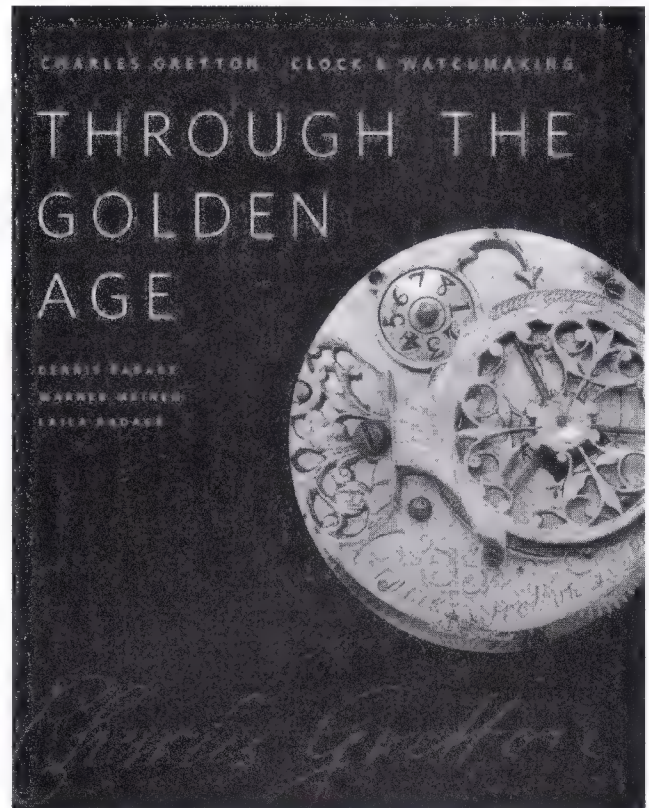
Most serious students of English timekeeping in the golden era of British horology will have heard of famous clockmakers, such as Thomas Tompion (1639-1713), Joseph Knibb (1640-1711), George Graham (1673-1751), and John Harrison (1693-1776). But a handful of artisans who were their contemporaries made clocks of similar quality and were nearly as prominent at the time. Joseph Windmills (circa 1640-1724) and Christopher Pinchbeck (circa 1670-1732) come to mind. Biographies were published about them. But no biography had been written on another prominent example, Charles Gretton (1647-1731), despite a large sample of his surviving clock making and watchmaking.

The book under review not only closes that gap, but it does so in a manner that is surprising in its thoroughness and insightfulness. After more than a decade of hard work, NAWCC members Dennis and Laila Radage, of British Columbia, Canada, and fellow Gretton enthusiast Warner Meinen from Holland have created a book, an amazing monograph, that goes beyond the standard glossy biography of a master craftsman of yesteryear. The book reflects the passion the three authors have developed for the life, the output, and the era of their subject.

Charles Gretton is an interesting person, with an interesting career, living in an interesting period of British and horological history. He also served as the master of the Worshipful Company of Clockmakers, the guild of London horologists, from 1700 to 1701. The book itself is structured into the following seven sections:

- The Man and His Life (73 pages)
- Longcase Clocks (162 pages), including a review of 30 Gretton longcase clocks
- Spring Clocks (156 pages), including a review of 23 spring clocks
- Lantern Clocks (22 pages), including a review of 2 lantern clocks
- Watches (101 pages), including a review of 18 watches
- Apprentices of Gretton (18 pages)
- Workshop, Staff and Production (20 pages).

In addition, the appendices focus on extant clocks



and watches as well as stolen watches. The bibliography consists of more than 100 references, and a name and subject index contains about 1,500 entries.

This book sets new standards for research into horological biographies. The only recent English-language biography in our field that comes to mind is the epic biography of Tompion written by Jeremy Evans, Jonathan Carter, and Ben Wright titled *Thomas Tompion 300 Years: A Celebration of the Life and Work of Thomas Tompion* (Gloucestershire, UK: Water Lane Publishing, 2013).

That book was the culmination of several decades of research by Evans that was finally turned into a publication by Carter and Wright.

The Gretton book too had a long gestation. Early in the millennium some notices in *Antiquarian Horology*, the quarterly publication of the Antiquarian Historical Society, called for a working group to study Gretton's work, but only Dennis Radage and Warner Meinen really committed to the project in 2006. Laila Radage joined shortly after. These exceptionally motivated authors completely devoted their lives to tracking every known timekeeper associated with Gretton, physically inspecting most of them in situ, and documenting each item in detail. They also pursued with equal rigor every piece of archival and documentary evidence. They spent the past three years assembling all of that data into a well-organized, comprehensive publication, choosing to produce a beautiful and extremely high-quality book—which not surprisingly is reflected in its price. The result is well worth the money and will be of great interest to anybody with a desire to learn more

about early clock making and watchmaking in England.

Thank you to the Radages and Meinen for creating a most valuable addition to the published record of a famous but still underdocumented era of British horological history.

Editor's note: For more information on the book, go to the July/August 2016 issue of the Mart & Highlights or visit www.grettonbook.com.

Charles Gretton: Clock & Watchmaking Through the Golden Age by Dennis Radage, Warner Meinen, and Laila Radage. ISBN 978-0-9940460-0-0. Toronto, ON: Three O'Clock Press Inc., 2016. 631 pages. Includes a foreword by A. D. W. Panes. Available in a hard cover with a dust jacket, a prestige edition with foil stamped slipcase, and a leather bound deluxe edition.

—Fortunat F. Mueller-Maerki, FNAWCC (NJ)

Inventor of the Watch That Was Affordable for Everyone

Pockets of horological history are grossly under-represented in horological publications, and one of them is the early history of the watch as a mass-produced item. Therefore, many students of horological history are barely familiar with the role a young German watchmaker and inventor¹ played from the 1860s to 1889 in making watches affordable to the masses.²

George Frederic Roskopf (1813-1889) apprenticed in La Chaux-de-Fonds, a city in Switzerland, where he established a small watch-manufacturing operation. In 1861 he developed a simpler, more robust watch movement, one that had a pin-pallet platform escapement, with the hands driven directly by the mainspring.

Bringing the retail price of a pocket watch down to the level of two weekly salaries for a factory worker radically changed the nature of the watch-manufacturing industry, first in Switzerland and eventually worldwide. The mechanical, industrially produced pin-pallet pocket watch—together with the alarm clock—was the most popular portable timekeeping device in the early twentieth century. But few horological aficionados today know anything about this chapter of horological history.

Paul Van Rompay is a recognized authority on the history of the Roskopf-type pocket watch. He has contributed several essays to the scholarly catalog of the 2013 temporary Roskopf exhibit at the Musée International d'Horlogerie in La Chaux-de-Fonds. Finally, he has published this monograph on his area of expertise. Unfortunately, it is written in Flemish, his mother tongue.

Anybody interested in pin-pallet watches should consider buying this book. Its 253 high-quality illustrations are mostly of pin-pallet watches not seen anywhere else in the horological literature. Google has a translation

feature that can be applied to the captions and selected passages of interest.

Scholars and researchers like Van Rompay who self-publish such books deserve not only our gratitude but our active support.

Editor's note: The editor found a note in the NAWCC Bulletin, No. 202 (October 1979): 555: "In La France Horlogere, 'Inexpensive Horology' by Jean G. Laviolette, gives an account of the efforts to produce cheap watches for the masses, commencing with the Roskopf watch."

Notes

1. George Frederic Roskopf later became a naturalized Swiss citizen.

2. The only other existing monographs on the Roskopf watch that I am aware of are: Albin Schaedler's *The Proletarian Watch* published in English with the ISBN 978-91-631-9608-9 and Jean-Michel Piget and Paul Van Rompay, et al.'s *La drole de montre de Monsieur Roskopf* with the ISBN 978-2-940489-44-2.

In addition, Richard Watkins translated a 1914 article in a French publication, *Journal Suisse d'Horlogerie*, written by Eugene Buffat titled "History and Design of the Roskopf Watch." It can be found at www.watkinsr.id.au/buffat.html, which was accessed on September 14, 2016.

G.F. Roskopf—Pionier van het volkshorloge (G. F. Roskopf —Pioneer of the popularly priced watch) by Paul Van Rompay and Armand Augustijnen. No ISBN. 99 pages. Includes 253 illustrations with most in color and an index to patents concerning Roskopf style watches. Available only from the author. Email him at p.vanrompay@telenet.be.

—Fortunat Mueller-Maerki, FNAWCC (NJ)

Fantastic Finds, the First One...and Related Tales

Edited by Fredric J. Friedberg (CA)

Members who have tales of super finds, unusual discoveries concerning any brand of clock or watch, along with stories about their first watch or clock or why they started to collect anything horological are welcomed to send them to Fredric J. Friedberg at fred@illinoiswatches.com and at fredric777@gmail.com. Please also note that the NAWCC is free to use the submitted images. Thank you all in advance for your contributions and anticipated participation.

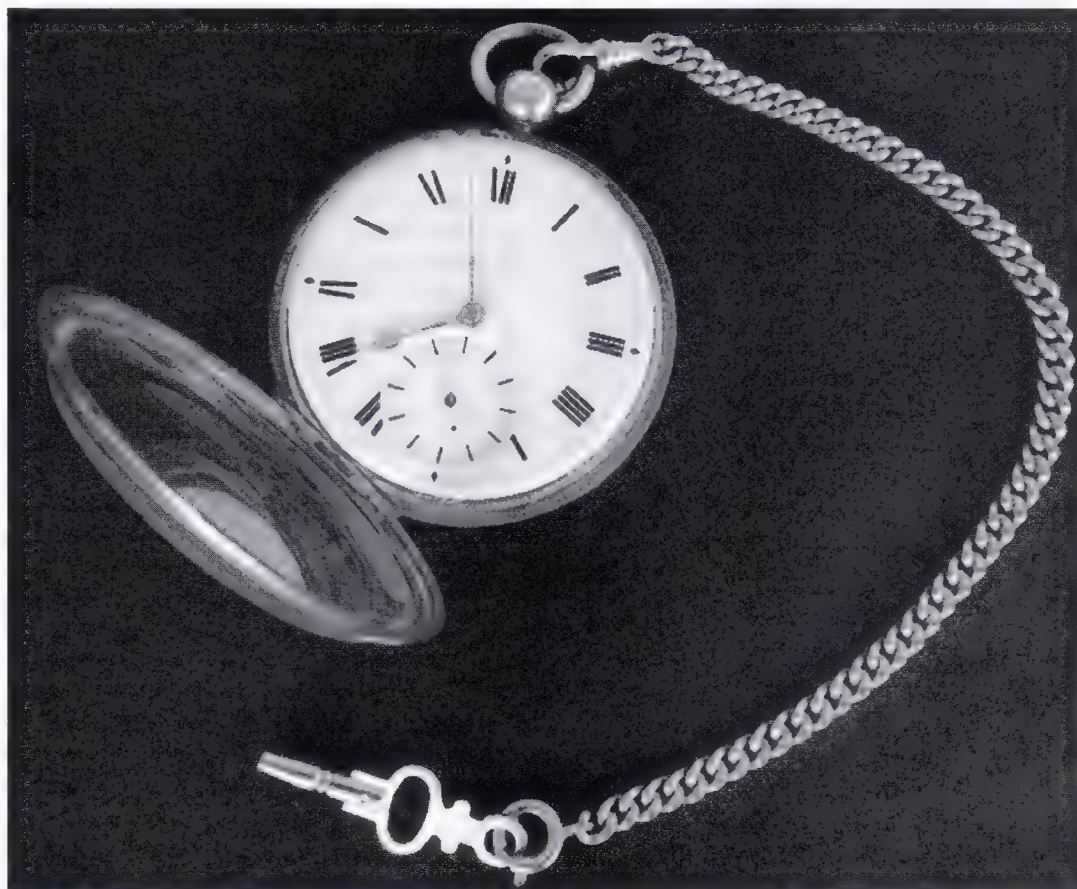


Figure 1. Dial of 14 kt. gold Omega pocket watch.

Fantastic Find Passover Style

My good friend Greg Hart writes:
"So, being the consummate collector of all things Illinois, I am always gathering spare parts, cases, and movements for the collection. One day, I see a pile of parts for sale on eBay and like so many before, I grab it for peanuts. I send the package directly to my watchmaker Jesse and it sits in his drawer for months along with my other piles of spare parts.

"On one of my trips to visit, I decide to help him out and sort out the hundreds of bits and pieces. I see a bag full of stuff, and as I am sorting I pick up a case and move-

ment that just doesn't feel right—it is way too light. Figuring that the movement inside is only a partial, I pop off the case back and what I see next makes my jaw hit the ground.

"Having seen an aluminum movement before, I knew what it was immediately. I checked the serial number and sure enough, it looks like the real deal. I was so excited I had to call Fred . . . [ring . . . ring. . .]

"Fred, being the man he is, answers the phone and says, 'Hey, I was just sitting down for Passover dinner.'

"Unable to contain myself, I said, 'Fred, I am so sorry to call, but I just found a perfect aluminum movement in a bag of parts!!!'

"As his family is sitting down for dinner [I am sure] I



Figure 2. Case of 14 kt. gold Omega pocket watch.

am reading off the serial number to confirm . . . I can hardly contain myself as Fred and I realize that this is truly one of the most Fantastic Finds of my life!

"It was a Passover I will never forget!"

FJF: Whew! I had to delay the start of our Seder to receive this incredible news!

A Trash to Treasure Story

Our top correspondent in California, Susan Forman, has supplied this amazing "Fantastic Find."

"Twenty-six years ago my late husband and I moved from the thriving metropolis of Los Angeles to a quieter lifestyle 250 miles north. Not ready to retire, we opened a 'mom and pop' watch and clock shop. Having a store in small town America provides the perfect social outlet to enable you to know just about everyone in town . . . and that includes the garbage men.

"So, one day in 1997 I walks the two garbage men for our town. After acknowledging them, I asked what brought them to our shop that day. Rather than a reply, one of the men handed me a watch. During the previ-

ous week's trash pickup they heard something go clang when they picked up a trash can. And there, on top of the trash was a watch. They had attempted to find whom the watch belonged to, but the house where the trash can was located was totally empty. They had tried for a week to track down the owner's whereabouts but to no avail.

"Since neither one of the garbage men was interested in watches, they asked if we would like it. They actually would have just given it to us, but we felt it was only right to offer them something. They suggested \$50; so, for \$50 we now owned a 14-karat gold Omega pocket watch, circa 1900-1910.

"Both the case and movement are marked 'Omega' [Figures 1 and 2]. The cuvette is engraved 'For 10 years service International Bohrgesellschaft'. Upon researching the company I found that it was a very important German firm founded by Anton Raky in 1895 to manufacture tools used in the petroleum industry, specifically for drilling. While the firm started out small, it grew rapidly and expanded beyond just toolmaking. Investments in the coal and oil fields worldwide led the July 20, 1907, *Petroleum Review* to report 'it can truly be said that International Bohrgesellschaft has a record which has no equal in the annals of the history of the petroleum industry.' This would have been at about the same time that this watch was presented to the original owner. Because the inscription is in English, perhaps the recipient was an American or English representative of the company, but that is just conjecture. International Bohrgesellschaft collapsed in 1932 and Raky gave up drilling entirely by 1936. He died shortly thereafter a poor man.

"P.S. Many collectors prefer not to have presentation inscriptions engraved on watches . . . but to me it adds to the story of the timepiece, such as with this Omega."

FJF: I totally agree with Susan concerning the value and added interest provided by watch inscriptions.

Now the Bargaining Began

Our first "Fantastic Find" from our northern neighbors as found by Ken Hogwood (TN):

"On a recent trip to Toronto, Canada, my wife and I did all the usual touristy things like visiting Niagara Falls and the CNN Tower. On Saturday morning we found ourselves with a few uncommitted hours, so we took the Hop-On-Hop-Off bus to the marketplace. Across the street was their Saturday 'antique event'—to us, a flea market.

"While wandering past the many tables set up outside the building, I spotted a pocket watch on a table along with many other trinkets and bric-a-brac [Figure 3]. I picked it up for closer examination and to my surprise, it was a very old backwind watch with a plain

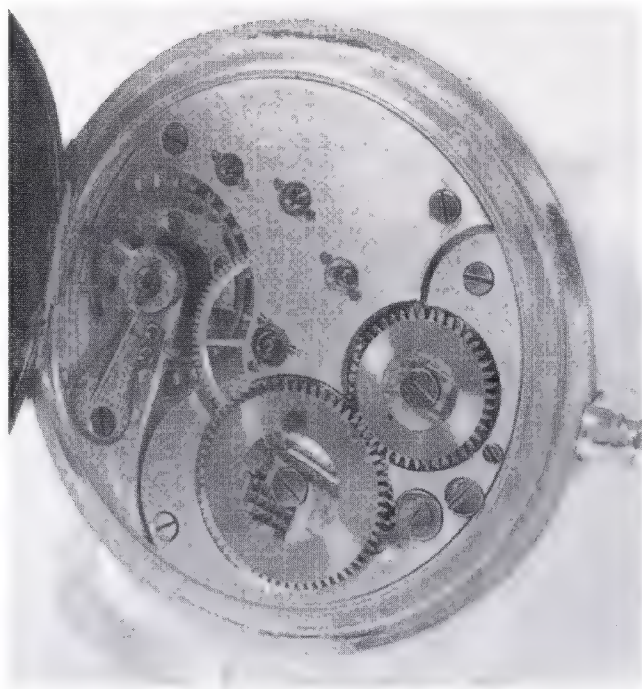


Figure 3. L'Epine pocket watch.

silver case. I opened the back and found the maker's name 'L'Epine.' While I know very little about pocket watches, the name was familiar to me.

"My main interest and research is carriage clocks. I and most carriage clock collectors know and respect the French carriage clock innovator and maker Paul Garnier [1801-1869]. I immediately remembered that Garnier had apprenticed at the House of L'Epine, a company in Paris, France, devoted primarily to making pocket watches.

"This association of the two names meant I 'must have' this watch! I then looked at the price tag to discover the dealer was asking 45 Canadian dollars for the watch. I asked if he knew if it ran or not and did he have the key? His reply was 'no' to both questions. I then asked if I could open the back to inspect the condition of the movement. With his permission, I opened the back and found a cylinder escapement and a free-standing going barrel. These features indicate the watch is circa 1790-1795. I checked to make sure the balance staff and hairspring were not broken; both were in good condition.

"Now, the bargaining began. I offered \$25; he countered with \$40. I offered \$35, but he held firm at \$40, so I agreed to the \$40. We, as visitors to a foreign country, must respect their custom of bargaining, but we would have happily paid the full price of \$45.

"After returning home, I purchased a key and had a fellow member of Atlanta Chapter 24 clean the movement for another \$30. My \$70 total investment is worth

\$200 to \$400, according to the *Complete Price Guide to Watches* [by Tom Engle, Richard E. Gilbert, and Cooksey Shugart and published in 2011 by Tinderbox Press]."

FJF: Ken was kind enough to also send in this information about the House of L'Epine:

The House of LePine, or L'Epine, was established by Jean-Antoine L'Epine (1720-1814) in Paris, France. He is responsible for many improvements that appear in many modern-day pocket watches, such as bar bridges, free-standing going barrel, virgule, cylinder, and lever escape-ments in watches, Arabic numbers, center second hands, moon-style hands, wolf's teeth gearing, gongs for repeater watches, much thinner cases, concealed case hinges, cuvette dust covers, engine-turned cases, and pump or pull wind stems (about 1790).

After his death in 1814 the school and factory were continued on by his grand nephew. The House of LePine was sold in 1914.

One of the most famous owners of a L'Epine pocket watch was George Washington. His watch was purchased for him in Paris on April 23, 1789. This watch is now on display in the Museum of Historical Society of Pennsylvania in Pittsburgh, PA.

Toasting With Einstein

Although time for Einstein
Went bending with space
And stirred up electro-magnetic
Black holes
Too frightening by our 50 years
He also knew love
And the refuge it can make
Like you dear Jean
Loving
Forgiving
Determined as a wife
And a refuge from every
Black hole and milky way
So let me lift a toast
To you and our love
And to Einstein
Who understood

Ray Comeau retired as associate dean and is a current lecturer in Harvard University's Division of Continuing Education. He is a loyal member of Chapters 8 and 87 in Massachusetts. He wrote the poem above to celebrate his 50th wedding anniversary and read it to a gathering of friends to celebrate the event. His email is comeau@hudce.harvard.edu.

© Raymond Comeau

Appraiser's Corner

Column by John Grow (CAN)

Library Greatest Resource Tool for Appraising Timepieces

Many times, I'm asked about the tools I use when appraising timepieces.

The greatest tools to which I have access are in my reference library or the Library and Research Center at the NAWCC in Columbia, PA.

Building a library specializing in horology takes many years, but I have narrowed my search to the following seven books that I frequently reference or go to first when I'm faced with specific models:

- Martha Tips, *Tips on Identifying and Appraising Clocks* (Dallas, TX: Books for All Time, 1991)
- Brian Loomes, *Watchmakers and Clockmakers of the World* (London: N. A. G. Press, 1976)
- Sonja Spittler, Thomas J. Spittler, Chris H. Bailey, *Clockmakers and Watchmakers of America by Name and by Place*, 2nd ed. (Columbia, PA: National Association of Watch and Clock Collectors, Inc., 2011)
- Eric Bruton, *Collector's Dictionary of Clocks and Watches* (London: N. A. G. Press, 1999)
- Richard E. Gilbert, Tom Engle, and Cooksey Shugart, *Complete Price Guide to Watches*, No. 36 (Sarasota, FL: TinderBox Press, 2016)
- Cecil Clutton, G. H. Baillie, and C. A. Ilbert, *Britten's Old Clocks and Watches and Their Makers*, 8th ed. (London: E. Methuen in association with E. & F. Spon, 1973)
- Kathleen H. Pritchard, *Swiss Timepiece Makers, 1775-1975* (West Kennebunk, ME: Phoenix Publishing, 1997)

Like any specialization, a vast number of horology books are available on any subject. If I'm looking at a Seth Thomas or Breitling product, then I have specialized books to reference. Just a collection of books on Patek Philippe will easily break the bank at around USD \$3,000. So it's best to visit reference websites, such as the NAWCC's online encyclopedia, before finding the books on the secondary market.

Auction houses are my second resource. Building a library of past auction catalogs provides data and insight on how much an item sold for at that given time. Many auction houses offer subscription services for their catalogs. It's best to narrow down your subscription to the auction house, which favors your timepiece of interest. Some of the ones to which I subscribe are the following:

- Antiquorum Auctioneers at www.antiquorum.com
- R. O. Schmitt at www.roschmitt.com
- Dr. Crott Auctioneers at www.uhren-muser.com



- Freeman's at www.freemansauction.com
- Bonhams at www.bonhams.com
- Heritage Auctions at www.ha.com
- Sotheby's at www.sothebys.com
- Christie's at www.christies.com

After years of collecting auction catalogs of timepieces and fine art, among others, space becomes a premium. It's hard to throw away past catalogs, because the information on past sales may not be available online.

In no way is this list complete, but it is a good start for someone who wants to begin appraising timepieces. When you decide to specialize in certain watchmakers, clockmakers, and companies, the LARC can help.

Just as the collection of timepieces at the National Watch and Clock Museum is of great value, so is the vast collection of material at the Library and Research Center, all of which is available to the members. For this reason I reserve a few days every year just to do research there. But there is one thing that I do know, "The more I learn, the less I know."

Author's disclaimer: I have no financial connection with any of the companies listed above.

About the Author

John H. Grow, ISA-AM, with Suzanne Charlebois, are partners in the firm of Prestige Evaluation, Inc., a full-service appraisal and brokerage firm that specializes in antique jewelry, jewelry antiquities, watches, clocks, and antiques in general. He is an accredited member of the International Society of Appraisers.

Education Spotlight

by Katie Knaub, Education Director, and Kim Craven, Marketing and Special Events Coordinator

New Name, Same Great Educational Opportunities

With 2017 marking the 20th anniversary of the Field Suitcase Workshop (FSW) Program, the NAWCC is pleased to announce a change to the program's name.

Starting in the fall of 2016, the program will be renamed the Watch & Clock Traveling Workshops. In the next few months the Association will be transitioning to the new name on nawcc.org and the NAWCC's publications.

This change was initiated and approved by the Board of Directors at its 2015 November meeting, in which the Education Committee was recognized.

The name change better captures how this educational program works for potential students. The titles of the courses will not change at this time.

Through the FSW program, more than 1,700 participants have taken educational courses, and FSW courses have been a feature of educational opportunities at the National Conventions.

Please follow the NAWCC's continued education progress on the website and look for new course schedules in upcoming issues of the *Mart & Highlights*.

—Katie Knaub (PA)

'Luxury or Lie' Wins Big in Las Vegas



Attendees of the National Pawnbrokers Association's Expo in July in Las Vegas, NV, speak with Adam Harris at the NAWCC's exhibit table.

COURTESY OF K M CRAVEN/NAWCC

What happens in Vegas stays in Vegas, except when you're talking about the NAWCC's groundbreaking course, "Luxury or Lie."

The National Pawnbrokers Association (NPA) booked instructor and guest curator at the National Watch and Clock Museum Adam Harris after hearing positive feedback about his course.

During the NPA's Expo in July in Las Vegas, Harris presented two sessions and spoke with hundreds of people as he highlighted the "Luxury or Lie" course.

Three watches, secured in a laminate box, lured curious pawnbrokers and expo visitors to the NAWCC's booth where they could vote on which watch they thought was genuine. But each watch was fake! All who entered the drawing had a chance to win a place in a

future "Luxury or Lie" class. The winner was Seth Gold with American Jewelry & Loan from Detroit, MI.

The *Pawn Stars* television program invited Harris to share his knowledge with the staff of the world-famous Gold & Silver Pawn Shop. Harris spent several days giving them an overview of various watch types, appropriate terminology, examination techniques, and ways to discern the genuine from the fake.

"With the continual improvements in technology, the detection of fake watches requires a greater awareness and scrutiny of all the watches that come across our pawn counter. Being the World Famous Gold & Silver Pawnshop from the show *Pawn Stars*, we see a lot of watches," said pawnshop co-owner Rick Harrison.

—Kim Craven (PA)

National Watch & Clock Museum & Library

Contributors to this issue are Lesley Moore, Museum and Library Intern, Noel Poirier, Museum Director, and Sara Dockery, NAWCC Librarian

Museum to Join Google Culture Institute with Help of College Intern

by Lesley Moore (PA)

When I was a high school senior, we had to complete a senior project, for which I decided to shadow an architect because I thought I wanted to be one. That shadowing experience showed me otherwise.

Fast forward four years, and I was in essentially the same position.

I am wrapping up my senior year in college as a history major, and I decided to complete an internship at a museum. I knew that teaching was not for me, and I knew I could not spend 40 or more hours a week doing pure research. I did, however, know that I loved researching a multitude of different subjects, coming to understand them, and then passing on that information. A museum seemed a perfect fit, and after an extensive search, I landed on the National Watch and Clock Museum in Columbia, PA.

When I interviewed for the position, I was frank about not yet having a focus and that I wanted to be involved with as many aspects of the Museum as possible. As a result, I gained a lot of experience in curating and, to a lesser extent in records, which turned out to be the perfect combination.

I had two main projects: the Google Cultural Institute project and the "button project." Most of my time was spent working on the Google Cultural Institute project, which had been started by a previous Museum volunteer. The button project was affectionately called that by my supervisor who had a similar project when he was an intern. Although I was working with watch movements and not buttons, the name stuck.

The Google Cultural Institute is an online platform where Google invites museums to create a small sampling of pieces from the museum that the public can view. The specific pieces are accompanied by a walk-through that is similar to the Google street view function.

I was given a liberal amount of independence to decide which items to choose and how to create the National Watch and Clock Museum's exhibit. For the first two or three days, I walked through the Museum and noted pieces that stood out to me as important to the

National Watch & Clock Museum

Thru November 30

Tuesday–Saturday 10 am–5 pm
Sunday, noon–4 pm

December 1 thru March 31

Tuesday–Saturday 10 am–4 pm
Closed Sunday and Monday

Library & Research Center

Tuesday–Thursday 8 am–5 pm
Friday 8 am–4 pm

Saturday noon–4 pm
Closed Sunday and Monday

history of horology or simply as visually stimulating pieces that would suit an online forum. I also asked Kim Jovinelli, the Museum curator, to point out items that were important to horology and also just to give some background on ones that I might have missed. Figures 1 and 2 are samples of items I compiled.

From there, I spent several weeks muddling through watches, clocks, and timepieces whose mechanics were way over my head, as I tried to make sense of them in a way that the average person viewing the Google Cultural Institute page would understand quickly and easily. As it turned out, a bachelor's degree in history was the bare minimum required for this job. I came out on the other end of this project with experience in a popular online platform, the museum software called PastPerfect, photography, research, and basic journalism. The more I worked in curating, the more I learned that museum work was much more than simply finding an important artifact and placing it on a shelf.

One of the best parts about working in the backroom with all the objects not on display was the insight it offered. I witnessed the massive amount of work that goes into each exhibit and item on display, from new artifacts to artifacts that need updating to re-discovering artifacts that previous generations may have forgotten about.

A small project I enjoyed was choosing items for the latest display in the Library and Research Center. This project gave me the opportunity to see and learn about many of the items not currently on display and to create a cohesive mini-exhibit. The result is on display in the Museum and incorporates two themes: a nautical theme with a compass clock, a globe clock, and two ship's wheel clocks, and a theme of feeling exposed with three open pieces that allow the viewer to see the working mechanisms in the clock (Figure 3).

A second side project involved me working with curator Jovinelli who has been methodically working her way through the items not on display and making sure that the information in PastPerfect is accurate and comprehensive. We and another intern Elizabeth Qual-



Figure 1. The fan-shaped pocket watch, left, features hands that pivot at the center. When the hands reach 12 or 60, they fly back to zero instead of completing a circle. On the back is the bust of the popular look from the late nineteenth and early twentieth centuries, known as a "Gibson Girl." This style was made popular by illustrator Charles Dana Gibson, right, which epitomized the ideal Western woman. She had an exaggerated S-curve torso shape achieved by wearing a swan-bill corset to cinch the waist and accentuate her bust and hips, yet she maintained a sense of ease and style, most often wearing her hair piled on top of her head in the latest bouffant and pompadour fashion. Even the shape of the watch itself reflects the Gibson Girl style with the voluptuously curved top and the cinched bottom

ia discovered some interesting things. The descriptions of the items needed to be standardized and clarified so they could be accessioned properly.

Another interesting find was a few pocket watches with watch papers on the inside of the dust cover. Watch papers are relatively rare in the watch collector's profession and are extremely helpful because they often document where a watch has been repaired and who repaired it.

Third, on these days of fact-checking, we came across a piece that, if correctly labeled, would have been the oldest piece in the Museum. It was decided that the date

was most likely wrong, but this process opened my eyes to the possibility of the treasures and history that could so easily have been lost.

A third side project I completed was an exhibit label for an item that was on display without a description. This project was particularly challenging, because I was provided with an eight-page article that described the mechanics and engineering behind a hand-crafted regulator that I had not previously understood. I then had to condense the article into about half a page of a description that was on a ninth-grade reading level and is as follows:



Figure 2. This example of a sundial features a small cannon that lines up with the 12 o'clock mark. At noon, the sun shines through the magnifying glass, lights a fuse in the cannon, and fires a round.

Simple Regulator Bernard Tekkippe C. 1997

In 1900, a German clockmaker named Sigmund Riefler, had developed a regulator that was accurate to one one-hundredth of a second (.01) a day—about one-tenth of the typical regulator of the time. By using a combination of a minimal number parts and adjustments to the gear train, pendulum, and escapement, this clock improved upon Riefler's model to a variation of about .008 seconds a day.

There are two sources of friction in the gear train: the bearings where the steel shafts turn in the brass plates and the wheel teeth as they meet. In this clock a high-ratio, three-gear train is used, which causes less friction and requires less weight than a traditional jeweled regulator.

Instead of using a mercury pendulum, this clock's isochronous pendulum is composed of invar, steel, and brass.

The purpose of the escapement is to transfer enough energy to the pendulum to keep it swinging, while trying to disturb its motion as little as possible. By attaching the pallets to the pendulum, it allows for direct contact with the escape wheel teeth, which negates the need for verge pivots or a crutch, and thus, creates less friction to the pendulum. The second change to the escapement is designing the pendulum to swing in a half circle instead of a full circle, which reduces the circular error resulting from changes in amplitude.

This project gave me a healthy respect for every label that provides a brief description of an artifact that may have caused hours of struggle with a specialty that is not one's own. It really drove home that, to be in the museum business of curating requires an individual to be able to tackle jobs that are far out of his or her comfort zone. For example, my main task was computer work during my internship. I handled the Google project and worked extensively with the Past-Perfect software. However, to complete many of my projects, I had to complete research on my own just to catch up with those whose specialty was horology and not history per se. To write a label that could be understood on a ninth-grade reading level, I first had to thoroughly understand the eight-page article in front of me, and then break it down into more easily

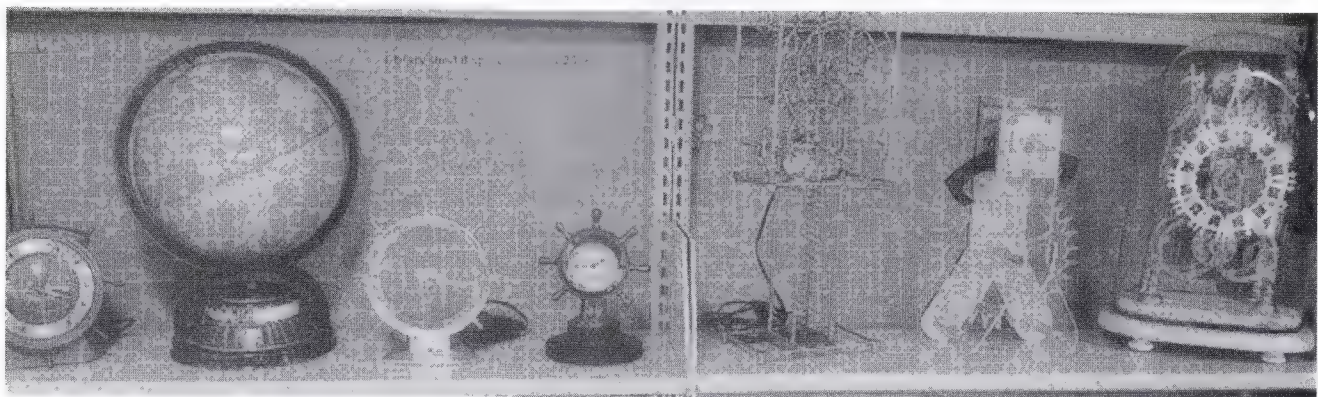


Figure 3. The theme in my first solo museum exhibit consists of pieces that are exposed so viewers can see their working mechanisms.

understood, yet just as accurate, terms and concepts.

My last project was the button project. Recently, a watch repairer donated a box with hundreds of wrist-watch movements to the Museum, which needed to be cataloged and photographed, and to have as much information as could be gleaned from them put into a computer filing system. This project required several hours of scrutinizing microscopic serial numbers and maker's marks and making sure everything was labeled correctly. I learned the difference between a mechanical watch and an automatic watch and discovered that I had developed an interest in automatic watches. Some pieces are still running, some are not. Some are worth a lot of money, some are not. Some had all the information I was looking for, some had none of it. Some made the project one that I wanted to continue, some did not.

I got through more than 300 movements and made a decent dent in this daunting task.

In sum, this internship provided on-site experience in a museum setting that is simply not available from a classroom. I was glad I had the opportunity to experience different positions within the establishment, and to hone my skills with museum software used nationwide. And, although it is not yet published, I am more than a little excited to see the National Watch and Clock Museum forum on the Google Cultural Institute website.

About the Author

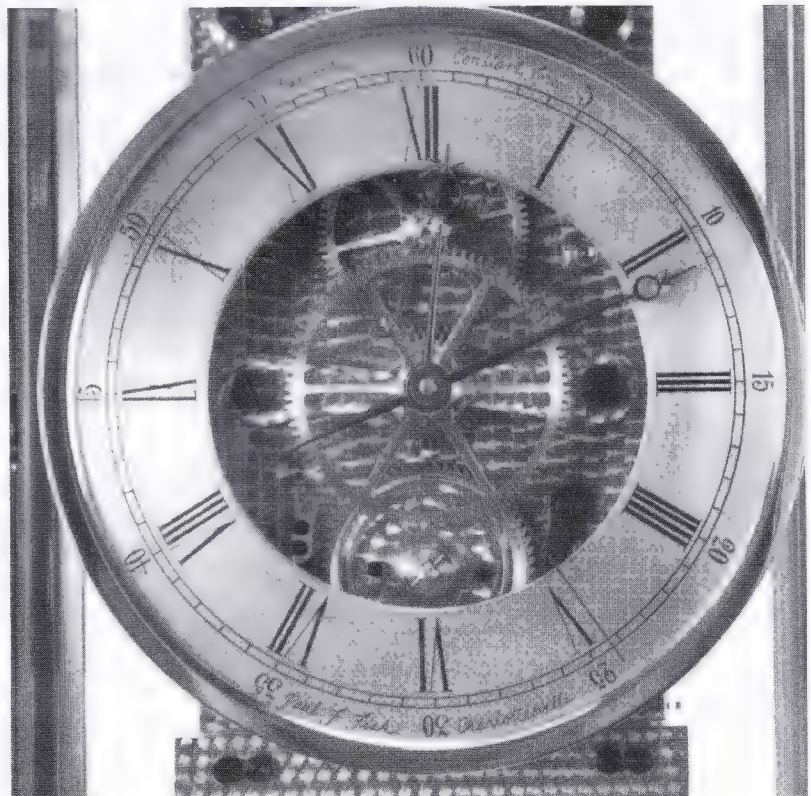
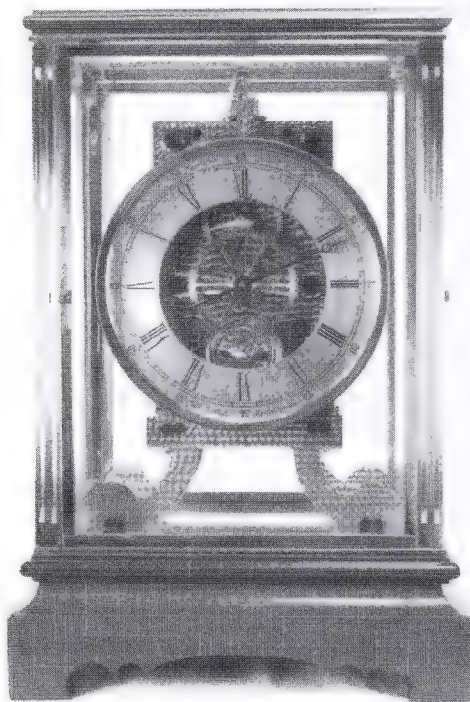
Lesley Moore was an intern at the Museum for in 2016. She is an undergraduate at Millersville University in Millersville, PA.

New to the Museum

This remontoire crystal regulator, circa 1993, was recently donated to the National Watch and Clock Museum in Columbia, PA, by NAWCC member and clockmaker Paul Fisk of Charlottesville, VA. The clock was featured in a 1998 issue of *Horological Times* and won a gold medal at the

1993 NAWCC National Convention. In addition to this clock, Fisk donated another of his award-winning clocks. The remontoire is on exhibit in the Library and Research Center and the tallcase clock will be exhibited in the Members Gallery in the Museum

—Noel Poirier (PA)



Library Changing How It Mails Materials

In August I sent an email blast, which was also published in the September/October 2016 issue of the *Mart & Highlights*, to the membership asking everyone to weigh in on proposed changes to our method for mailing library materials.

Because of some recent issues with delivery, I proposed either changing to UPS delivery at a flat rate of \$7 for up to three items or continuing to use USPS and raising the rates by \$1 for each tier (\$5 for one, \$6 for two, or \$7 for three) and adding delivery confirmation to all packages.

I thank everyone who contacted me to share their opinions. The majority of people supported a move to UPS with a flat rate of \$7. Notably, a clear majority of the voters who have used the library's lending service voted for the switch.

As a result, we have decided to change our default mailing service to UPS, but retain the option of using USPS for members who prefer the latter method. The library lending form will be updated to reflect the changes to our policies and include a check box for those who prefer their materials be sent through USPS. This updated form will appear in each issue of the *Mart & Highlights*, beginning with the November/December issue, as well as at nawcc.org.

I understand that the change may be disruptive for some of our members, but I think this change will be in the best interests of the Library and Research Center and our patrons.

The change was implemented October 1, 2016, and I hope to continue to have a smooth transition.

—Sara Dockery (PA)

New Books

1001 Wristwatches: From 1925 to the Present by Martin Häussermann

300 Jahre Berner Uhrmacherkunst: Zur Geschichte der Uhrmacher im Kanton Bern by Ursula Bischof Scherer

The Ancient Clock of the Tower of Saint Geremia in Venice by Francesco Zane

Le Balancier du Monde: la Matière, la Machine et la Mort: Essai sur le Temps des Techniques by Jean-Claude Beaune

The Beauty of Time: The Watches of A. Lange & Söhne by Harry Niemann

Clackmannanshire's Clockmakers and Public Clocks by Robert L. Lindsay

Finding Longitude by Richard Dunn and Rebekah Higgitt

The Illustrated Glossary of Wristwatch Definitions

Lancashire Watch Company: History and Watches by John G. Platt

Legendary Wristwatches: From Audemars Piguet to Zenith by Stefan Muser

The Mechanics of the Fine American Watch: A Graphic Story of the Assembly of a Hamilton Watch

Nowoczesny Zegarmistrz by H. Jendritzki

The Omega Watch Collector Guide

Public Clocks of Louisville by Chuck Kays

The Rolex Collector and Investor Guide

Rolex: History, Icons, and Record-Breaking by Osvaldo Patrizzi and Mara Cappelletti

Swatch Watch: A Definitive Guide 1983-2000 by Rob Versteeg

Swatch Yourself: The Very Complete Swatch Collec-

tion—All from 1983 on Watches: The Ultimate Guide by Fabienne Reybaud

Watchmakers' Handy Manual 1949 by C & E Marshall Co.

Wijzers uit het Oosten by Museum van het Nederlandse Uurwerk

The Wristwatch Almanac by Michael Balfour

New Videos

The German Clock Road by NAWCC Chapter 53 Inland Empire

Horology in Art by Bob Frishman

Lawson Time is Modern Time by Dr. Neil Kuns

Questions You Should Ask Before Buying That Wristwatch by Adam Harris

A Review of English Skeleton Clocks: With an Emphasis on Architectural Models by Bob Schmitt

Rockford Watches: Its Products and Ephemera by Darrah Artzner

Sacred Time: Symbolism and the Religious Concept of Time by Kim Jovinelli

Tiffany Never-Wind by Jay McAlister and Roy Crowe

Watches of the Taft Collection by NAWCC Chapter 23 Buckeye

What's New at the Fair? World's Columbian Exposition by Pat Holloway

We thank the following individuals for their donations to the Library and Research Center: Ralph Ferrone, Chuck Kays, Louis Krupp, Patricia Morton, Parrocchia di SS. Geremia e Lucia, John Platt, Barbara Smith, Jack E. Wallace, and John F. Wise Jr.

Thank You to Our 2016 Writers!

During this time of thanksgiving, the Publications Department wishes to recognize those who have invested countless hours to research and write for the *Watch & Clock Bulletin*. As 2017 approaches, the Department will be welcoming new and current voices to provide their work to advance horology and the collection of timepieces in the upcoming year. The authors are listed alphabetically with brief bios and a list of articles and features written in 2016.

DARRAH ARTZNER, FNAWCC

Artzner is a member of several Texas and Special Interest Chapters. He has worked on clocks and watches since the 1980s. His main interest is working on pocket watches, especially Rockford Watch Co. watches. • No. 420 "The Rockford Watch Co. and Its Watches, With Emphasis on Model Identification".

DAVID BAILEY

Bailey, a longtime NAWCC member, has been designing and making wooden clocks for more than 30 years. He was a gold medalist in the two-and three-train wood movement class in the 1997 Crafts Competition. Bailey has spoken about his interests at Chapter meetings and Regionals and has written several articles for the *NAWCC Bulletin* and the *Watch & Clock Bulletin*; some of his clocks were on the journal's covers. • No. 419 "Willard-Style Timepiece with a Wooden Movement" and No. 422 "31 Years of Wooden Wheel Clock Making: A Pictorial Review".



MIKE BAILEY

Bailey, a senior geologist who has worked for the US Army Corps of Engineers for the past 22 years, with a focus on environmental cleanups at EPA Superfund sites and Department of Defense sites, is a treasurer of Great Plains Chapter 58, member of the Cog Counters Chapter 194, and past president of Mount Rainier Chapter 135. He has written articles for the *Cog Counters Journal* and Research Activities & News column in the *Watch & Clock Bulletin*. His current research projects include the labels used in 30-hour, weight-driven Jerome clocks; the clocks of S. B. Jerome; the evolution of the Jerome factory in New Haven, CT; and the evolution of movement plates in the Jerome patent movement. • Research Activities and News: No. 422 "Chauncey Jerome Steeple with Possible A. S. Platt & Co. 8-Day Movement".

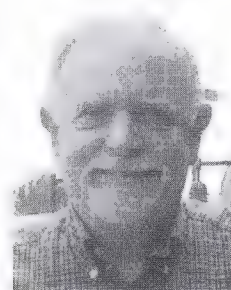
SELMAN A. BERGER

Berger is a professor emeritus of chemistry from John Jay College of Criminal Justice, CUNY. He has been collecting, researching, and restoring pocket watches

for 40 years, with a particular interest in the Keystone Howard watches about which he has written several articles, among others, for the *NAWCC Bulletin* and the *Watch & Clock Bulletin*. • No. 422 "The 3/4 Plate, 18-Size Elgin Movement Transitions in Material and Design" and No. 424 "Characteristics of the 16-Size, 3/4-Plate 1905 Howard Movement".

RAY BROWN, FNAWCC

Brown managed research and manufacturing operations in the aerospace and semiconductor industries for more than 30 years. He is past president and newsletter editor for Chapter 69 and past president and current newsletter editor for Chapter 133. Brown was the general chair of the 2009 and 2010 NAWCC Greater Los Angeles Regional and exhibit chair for the 2016 Channel Islands Regional. • No. 420 "My Dad's Railroad Watch".

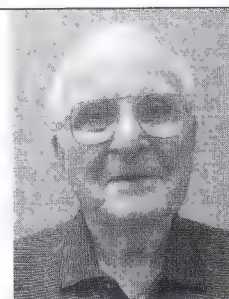


DAN BUFFINGA

Buffinga, formerly an automotive technician, was drawn toward clocks. After learning correct and proper repair procedures, he became a self-employed antique clock repairer and restorer, specializing in fusee, chime tube, and musical clocks. • No. 420 collaborated with Owen H. Burt "Restoration of a Walter H. Durfee 9 Tube Tall Clock".

OWEN H. BURT, *FNAWCC

Burt, a longtime NAWCC member and former NAWCC president, along with his wife, Jo, have written many articles for the *NAWCC Bulletin* and *The Welch, Spring and Company, NAWCC Bulletin Supplement*, No. 12 (February 1978). Their main interests have been the Welch, Spring and Co.'s Patti and Durfee clocks. • No. 420 collaborated with Dan Buffinga "Restoration of a Walter H. Durfee 9 Tube Tall Clock".



DENIS CARIGNAN

More than 20 years ago, Carignan, a lifelong resident of Belmont, NH, went to a collector with a watch and asked if it was worth fixing and how to repair it; the gentleman gave him some tools but thought he wouldn't be able to repair it. An obsession was born as well as a business. Carignan derives much enjoyment from complicated repairs and restorations and willingly shares his knowledge, skills, and experience with anyone who is interested. • No. 424 "2016 Pritchard Winner: Restoration of a Breitling Laederich Watch".

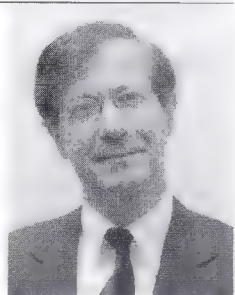
SUZANNE CHARLEBOIS

Charlebois is a registered gemologist and is a partner with John Grow in Prestige Evaluation, a full-service appraisal and brokerage firm that specializes in antique jewelry, jewelry antiquities, watches, clocks, and antiques in general. They have been featured on radio and television shows and charity appraisal fairs. • Appraiser's Corner: No. 419 "When Do Gems Add Value to Your Timepiece?"; No. 421 "Glamour and Allure of the Diamond Watch"; and No. 422 "Finding a Treasure Is All about Your Strategy".



RAYMOND COMEAU

Comeau retired from being dean of Harvard University's Division of Continuing Education. He still teaches courses as a lecturer in the division on a range of topics in French literature and management studies. A poet for most of his life, he enjoys sharing some of his poems with NAWCC members. • No. 419 "John Harrison's Fortune"; No. 420 "Breitling on my Palm"; No. 421 "Perilous Cell"; No. 422 "Bedtime"; No. 423 "The Ancient Harvard Square Clock"; and No. 424 "Toasting with Einstein".



COREL DISCOVERY CENTER

Corel Discovery Center of Corel Corp. in Ottawa, CAN, partnered with the National Watch and Clock Museum in Columbia, PA, in a photography contest with the theme of time. The winners were temporarily showcased in the Museum. Among the judges was Museum Director Noel Poirier. • No. 421 "A Matter of Time Photography Contest".

JOHN CROWLEY

Crowley, a longtime NAWCC member, retired from the telecommunications, hospitality, and health care

industries. He is an aspiring horological hobbyist and hopes that conserving this particular clock and documenting its history will motivate others to pursue horological interests. • No. 420 "Chauncey Jerome Double Ogee".

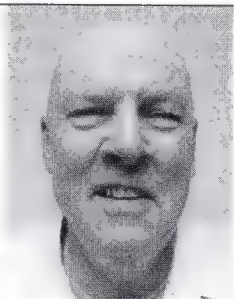
MARY JANE DAPKUS

Dapkus retired as an environmental analyst and museum curator and became interested in research and clock repair upon purchasing her first wooden movement shelf clock in 1996. An NAWCC member since 1999, she is a member of the Research Committee and Chapters 8 and 194, and secretary of Chapter 148 as well as a contributing editor to *Timepiece Journal*. For years she has been involved in the feature titled Research Activities and News. • Research Activities and News: "Visitor from the UK: Mike Flannery, Horological Conservator and Winston Fellow 2015", "Iron Fence at Old Terryville Cemetery in Need of Restoration", and collaborated with former editor Snowden Taylor "More Unusual Clocks, Movements, etc. Reported"; No. 422 "Conceptual Model of Eli Terry's Porter Contract Gear-Cutting Engine Proposed by George Bruno [CT]" and "More on the ca. 1841-1844 Sumner Smith, Hartford, CT, Chronometer"; No. 423 "Edward Langdon [1806-1879]: Supplied Brass Clock Castings to Hotchkiss & Fields of Burlington, CT, and to Previously Unknown Firm Hotchkiss & Co. . . . and a Probable Link to H. Webster/Burlington Clocks"; and No. 424 "Notes on Wooden Movement Tall Clockmaker John Rich [1763-1812] of Bristol, CT: Part 1 of 2: Lawsuits Involving George Mitchell & Co." • No. 419 "Aaron Willard Jr. and the Sea Captain's Widow".



LEE DAVIS, *FNAWCC

An NAWCC member since 1966, Davis has written several articles for the *Watch & Clock Bulletin* and is the author of NAWCC Bulletin Supplement No. 18, *Greek Revival Influence on American Clock Case Design and Empire Clock Case Development*. He was a national director from 1985 to 1989, acting executive director in 1988 and 2001, and acting NAWCC Bulletin editor in 1988. He also received the James W. Gibbs Literary Award in 2003 and the Dana Blackwell Award for Excellence in Clocks in 2001. • A Special Interest: No. 424 "A Look at Stenciled Clock Splats".



FRANK DEL GRECO, *FNAWCC

Del Greco, a former NAWCC Board chair, collects tower clocks and also restores those in his community. He is a member of the Publications Advisory and Review Board and the Development Committee and has been a frequent contributor to the *Watch & Clock Bulletin*. • No. 419 "Weight Case of Charles Alvah Smith".

**ANDREW DERVAN, FNAWCC**

Dervan won the James W. Gibbs Literary Award this year for his extensive contributions to the *Watch & Clock Bulletin*. Dervan joined the NAWCC in 1997 and in 2000 began researching the histories of various makers and companies. In 2011 he retired from DuPont Performance Coatings and spends some free time writing articles for *Watch & Clock Bulletin*, running his clock appraisal business Pointe Clock Appraisal, and volunteering at The Henry Ford Museum and at a local animal shelter. • Research Activities and News: No. 421 "Willard Clock Co.: Selling Clocks by Mail Order" • No. 421 "Trend and Sligh Clocks" • No. 422 "Edward A. Locke: 'Patent Solicitor' Patents, Profits, and the Quest to Produce an Inexpensive Watch" with addendum and "Overview of Connecticut Wooden Shelf Clock Movements: Terry, Groaner, and Torrington".

**MICHAEL EDIDIN**

Edidin is a professor of biology at Johns Hopkins University in Baltimore, MD. His teaching and research are in the areas of immunology and biophysics. Besides his scientific publications he is proud of his *Watch & Clock Bulletin* articles on English watches. • No. 416 "Eugene Paulus Has His Day in Court: Further History of Paulus and Philadelphia Watch Co."

**HAROLD ENGELHAUPT**

Engelhaupt has been a member of the NAWCC since 1976. He was the general chair of the 2016 River Cities Regional and is the acting general chair of the 2017 River Cities Regional. • Regional Recap: No. 423 "Heart of America Chapter Renewal Linked to Increasingly Successful Regionals".

EDWIN FASANELLA

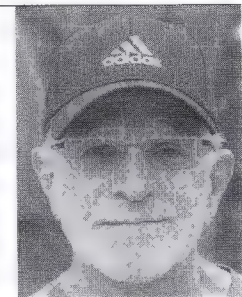
Fasanella, a longtime active member of Chapter 34, received a doctorate from Duke University and taught university physics before working in the aerospace field. He retired from the NASA Research Center. • Research Activities and News: No. 420 "Long Island Railroad Time Table Watch Paper" • No. 419 "Using 3-D Printing to Replace a Fiber Composite Gear in an Old Electric Movement".

**PAUL FOLEY**

Foley is an independent horological researcher residing in Plymouth, MA. He is the author of *Willard's Patent Time Pieces: A History of the Weight-Driven Banjo Clock 1800-1900* (Plymouth, MA: Roxbury Village Publishing 2002). • No. 419 coauthored with Michael G. Poisson "Phineas Guptill's Precision Month Going Composite Wood and Brass Movement Tall Clock".

FREDRIC J. FRIEDBERG

The inspiration for Friedberg's series originally titled *Fantastic Finds and Related Tales* was a similar feature in his 2004 book titled *The Illinois Watch: The Life and Times of a Great American Watch Company*, where he writes about interesting finds from dozens of Illinois watch collectors. His feature showcases discoveries from members nationwide and worldwide and was expanded this year to include the First One feature. His new book *The Illinois Watch and Its Hamilton Years: The Finale of a Great American Watch Company* will be published by Schiffer Publishing, Ltd. in 2017 as a three-volume box set. • *Fantastic Finds, the First One ... and Related Tales*: No. 420 Jeff Jewett "With a Big Sigh" and Danny Evans "The Moon and the Stars"; No. 421 Barbara and Chuck Christensen "Friendship" and Patrick DeSantis "Non-profit Auction Site"; No. 422 Steve Gossard "Brought It Back to Life", Doug Cummings "I Couldn't Believe My Ears!", and Jeff Jewett "Not Being Able to Sleep!"; No. 423 Paul Henion "At the Left End Are Two Gems", Mike McNamee "No Earthly Reason", and Steve Parsons "Putting It to Good Use" and "Why Do I Collect Watches?"; No. 424 Greg Hart "Passover Style", Susan Forman "A Trash to Treasure Story", and Ken Hogwood "Now the Bargaining Begon".



BOB FRISHMAN, FNAWCC

Frishman has repaired, restored, collected, sold, and researched antique timekeepers since 1980. He lectures about the history, science, and culture of mechanical timekeeping. He is an NAWCC Fellow Award, chair of the Ward Francillon Time Symposium Committee, and organizer of the 2016 "Clocks at Winterthur" Symposium. • Auction News: No. 419 "Texans' Clock Collection Sells in Massachusetts"; No. 421 "Willard Skeleton Clock Among Top Prices, But Watches Still Fetch Strong Sales Totals"; and No. 423 "Watch Captures Highest Bid But Clocks Dominate in Numbers" • Horologica: No. 419 "Japan Clock Museum and Repair School"; No. 420 "Met Exhibit Showcases Brilliance of French Watchmaking and Clock Making" and "2016 Symposium 'Clocks at Winterthur'"; No. 421 book review of *Simon Willard Patent Alarm Time Pieces: An Exhibition of Willard Lighthouse Clocks*, "Clocks of Historic Deerfield", and "Antique Clocks at the Modern Whitney"; No. 423 book review of *The Time Garden: A Magical Journey and Coloring Book*, "History and Inner Workings of the Harvard Coop Clock", "200th Anniversary of Lemuel Curtis Patent", and "Clocks and Papers at the Connecticut Historical Society" • Horology in Art: No. 419 *Ecce Homo* by Rembrandt van Rijn; No. 420 *Winding the Clock* by Winslow Homer; No. 421 *Old Clock on the Stairs* by Edward Lamson Henry; No. 422 *Watch and Fob* by J. A. Tilles; No. 423 *The Clock* by Christian Marclay; and No. 424 *The Awakening Conscience* by William Holman Hunt.



ROBERT GARY

Gary is a member of Ventura Chapter 190 and was editor of the Chapter 75 newsletter, *The Regulator*, for several years and has had more than half a dozen articles published in the *Watch & Clock Bulletin* and the *Mart & Highlights*. Gary is chair of the Audio Visual Committee and sits on the Development Committee. • Horologica: No. 423 "NAWCC Makes Appearance at World Watch Market" • No. 423 "It's All about the Youth".



JOHN GROW

Grow, ISA-AM, is an accredited member of the International Society of Appraisers and is a partner with Suzanne Charlebois in Prestige Evaluation, Inc., a full-service appraisal and brokerage firm that specializes in antique jewelry, jewelry antiquities, watches, clocks, and antiques in general. They have been featured on radio and television shows, and charity appraisal fairs. He is a public speaker, and has written articles on communications and technology. • Appraiser's Corner: No. 424 "Library Greatest Resource Tool for Appraising Timepieces" • No. 419 "Luxury or Lie?"—A Review".



DAVID HAGBERG

Hagberg's father, the late Kenneth Hagberg, trained with Worcester watchmaker Gus Lahde and worked for Bradford W. Cheney. David worked for Bruce Cheney for several years and is mentoring his son, Andrew, in the craft. • Horologica: No. 422 "Experiencing Horology in Threes".



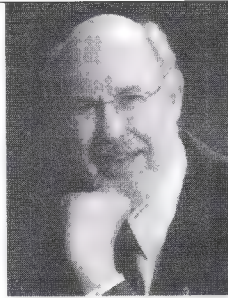
PATRICIA "PAT" HOLLOWAY, FNAWCC

Holloway's horological interest and collecting habits are very eclectic, but they are based on watch-related items that were relatively inexpensive and used daily in their time. She has written articles on horology at US World Fairs from 1893 to 1982, the relationship between bicycles and watch companies, and collecting watch keys. She has been active in several Chapters and is a member of the Capitol Area Watchmakers and Clockmakers Guild. • No. 424 "Watch Holders and Litchfield Clocks: A Common Thread?"



ROBERT HOSTETTER

Hostetter retired after 40 years with Hamilton Watch and several other manufacturing companies ending with Bulova Technologies. Since 2006 he has been volunteering at the NAWCC Library where he is entering information about Hamilton tools and watch part drawings into Access databases. • Remembering Hamilton: No. 420 "The Hauser Precision Jig Borer".

**RANDY JAYE**

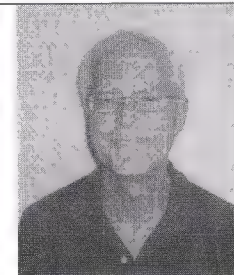
Jaye, a "generalist" collector and restorer of clocks and watches, has served for many years as president of Chapter 154 in Daytona Beach, FL. He has held various chair positions at past Florida Mid-Winter Regionals and is the general chair for the 2016 Florida Mid-Winter Regional. To date, he has presented programs on various watch and clock subjects to eight different NAWCC Chapters and at several Regional events • Profiles in Time: No. 419 "David W. Howard" • Regional Recap: No. 421 "2016 Florida Mid-Winter Regional Success at a New Location" • No. 421 "Roger W. Riehl and the Synchro: World's First Solar-Powered Wristwatch".

**THOMAS JESWALD**

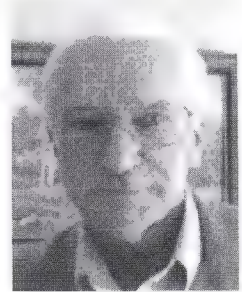
Jeswald is secretary and newsletter editor of the Northern Illinois Watch and Clock Club, and a past president of the Western Pennsylvania Watch and Clockmakers Association. He holds a doctorate from Purdue University and retired from a career as an industrial and organizational psychologist and human resources manager. • No. 424 coauthored with Robert Witzack "Researching Private Label Watches and a Frank Lloyd Wright Connection".

**C. STUART KELLEY**

Kelley was a physicist whose scientific publications and patents supported the US Department of Defense. His main horological interests are early English clocks and the physics of the pendulum, and he authored *Henry Jones—Clockmaker of London*. • No. 421 "Symmetric Hand Positions".

**STEVE MALLORY**

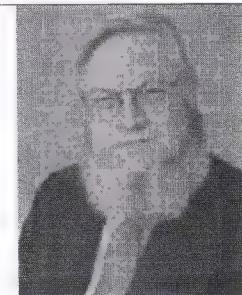
Mallory has been an NAWCC member since 1972, serving as a founding member of the NAWCC Palomar Chapter and member of the Research Committee. He wrote the book titled *Clock & Watch Companies: 1700s-2000s*. He has operated a sole proprietor clock company for the repair and restoration of clocks, clock appraisals, and horological research since the early 1980s and resides in Camillus, NY. • No. 421 "A Compilation of Clock Chimes & Sequences Reprise".

**KEN MCWILLIAMS**

McWilliams has written many articles on general horology, the NAWCC, and technical clock-related topics and has given many presentations and workshops. He is president of the Ventura-Santa Barbara Chapter 190 and past president of San Fernando Valley Chapter 75. • Profiles in Time: No. 421 "Dan Weiss".

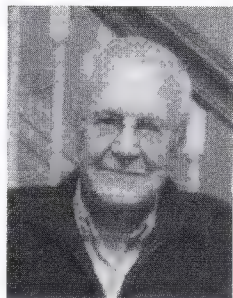
FORTUNAT F. MUELLER-MAERKI, FNAWCC

Mueller-Maerki has been a frequent contributor of book reviews to *Horologica* and the NAWCC's online message board. He is chair of the Library Collections Committee and a member of the Publications Advisory and Review Board. • *Horologica*: No. 420 review of *European Clocks and Watches: In the Metropolitan Museum of Art*; No. 421 review of *Antikythera Mechanism—The Book* and "Symposium Goes Overseas in 2019"; No. 422 review of *History, design and application of astrolabes on dials of astronomical clocks* (title translated from the German *Geschichte, konstruktion und anwendung des astrolabiums bei zifferblaetterm astronomischer uhren*) and review of *Fifty Watches That Changed the World*; No. 423 review of *Clockmaking in England and Wales in the Twentieth Century*; and No. 424 review of *Charles Gretton: Clock & Watchmaking Through the Golden Age* and G. F. Roskopf — *Pioneer of the popularly priced watch* (title translated from the Flemish G.F. Roskopf—*Pionier van het volkshorloge*).



JAMES PEGHINY

Peghiny, who retired as an electronics engineer and now owns a watch and clock repair business, began collecting around 1960 and was mentored by a final adjuster at the Waltham Watch factory. He has contributed several articles to the *NAWCC Bulletin* and is working on one about Auburndale Watch Co. and another about a timing device being used at the Blue Hills Observatory. He has also presented seminars at local Chapter meetings and at the Willard Museum. • No. 423 "Waltham 14-Size Test Fixture".



JAY PINE

Pine, a self-employed custom home designer in Texas, has been collecting and researching Mastercrafters, Haddon, Kit Cat, and Jefferson clocks since he bought his first Mastercrafters Swingtime clock in 1994. • No. 419 "Sylvania Television Award and Its Clock: From Fame to Obscurity".

MICHAEL G. POISSON

Poisson is a third-generation horologist residing in Wayland, MA, who began his clock making and watchmaking apprenticeship at age ten. After he completed his formal education, he studied under a renowned European clockmaker and has continued for the past 40 years restoring clocks and watches. • No. 419 coauthored with Paul J. Foley "Phineas Guphill's Precision Month Going Composite Wood and Brass Movement Tall Clock".

PHILIP PRIESTLEY, *FNAWCC

Priestley, who has a bachelor's degree in chemistry, retired from Eastman Kodak in Rochester, NY. In Rochester he was an active member of Chapter 13; now he heads the English Chapter. He has been an NAWCC director, and he received the NAWCC James W. Gibbs Literary Award for authorship and the Silver Star Fellowship Award for services to the NAWCC. His extensive research during several decades was documented in several NAWCC books and *NAWCC Bulletin* supplements. • No. 422 "Is This the Watch That Saved Waltham?"



E. ALLEN RICHARDSON

Richardson, professor of religious studies at Cedar Crest College in Allentown, PA, is the author of four books on religious diversity and transplanted forms of Hinduism in the United States. A longtime NAWCC member, he specializes in English watches. He is past president of Chapter 1. • No. 423 "Early Personalized Watch by Francis Gregg".



ROBERT SHAW

Shaw served his apprenticeship with James Walker Jewelers and attended the Northern Polytechnic in London. He restored all types of high-quality clocks under his mentor, Donald de Carle. Then he moved to Bermuda where he remains the only "clockmaker" on the island. He won first place with his astronomical regulator in the 2005 Crafts Competition at the National Competition. • No. 420 "E. Howard Tower Clock Restoration".

BRUCE SHAWKEY

Shawkey is a wristwatch collector, dealer, and historian. This year marked the last installment of the feature he started titled Wristwatches that appeared in the *NAWCC Bulletin* and *Watch & Clock Bulletin* since 1997. He also wrote and self-published *Gruen Wristwatches: A Collector's Guide* and *Remembering Hamilton*. • Wristwatches: No. 419 "Waltham Trench Watches of the Great War—A Review".



DOUG SHUMAN

Shuman retired as a retail executive who has always loved watches and clocks and is an expert in repairing repeaters and complicated pocket watches. • No. 423 "Modern Tools for the Ancient Art of Horology".



RUBENS SIGELMANN

Sigelmann, a longtime NAWCC member, retired from teaching in the Electrical Engineering Department at the University of Washington in Seattle. He gained training and inspiration in clock making and watch-making from the late George Lewis, longtime horological educator at North Seattle Community College. • No. 419 "Compound Pendulum and Its Use in Swinger Clocks and Space and Time Measurement".

ROBERT SIMON

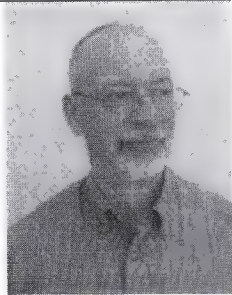
Simon retired after 40 years of a diversified career in railroad civil engineering. He and his wife have been clock collectors since 1976, and they live in the San Francisco Bay area. • No. 423 "US Navy Warren Telchron Clock System."

ROGER SUHR

Suhr retired as a law enforcement officer and has enjoyed the hobby of antique clock and watch collecting since he was a teenager. He is a US Navy Vietnam veteran and submarine Cold War veteran who enjoys military history. • No. 419 "Heuer Chronograph Pocket Watch with a Story".

ROBERT WITZACK

Witzack graduated from the University of Wisconsin with a BS in art and education, and had careers as a railroad engineer and a teacher. He has been an NAWCC member since 2008 and currently works part time in clock and watch repair for a local jeweler in Janesville, WI. He collects wristwatches and pocket watches, especially South Bend pocket watches, as well as does paintings in oil and is member of the Janesville Art League. • No. 424 coauthored with Thomas Jeswald "Researching Private Label Watches and a Frank Lloyd Wright Connection".

**TOM WOTRUBA**

Wotruba, a carriage clock enthusiast and member of International Carriage Clock Chapter 195, retired from his university professor career during which he published textbooks and many articles in academic journals. • A Special Interest: No. 422 "A Remarkable Carriage Clock and Its Maker Achille Brocot" • No. 419 "How Did A. L. Breguet's Carriage Clocks Influence His Business Success?"

The Answer Box contributors: No. 419—Tom McIntyre and Scotty Dean; No. 420—Paul J. Foley, Joseph Brown, Peter Recourt, and Al Stevenson; No. 421—David A. Sperling and Paul Dumanoski; No. 422—David Boettcher and contributors Philip Priestley and Richard Edwards, Ed Ueberall, Steven Thornberry, and Chris Bailey; No. 423—Chris H. Bailey; No. 424—Lee Davis, Charles E. Davis, and Ed Ueberall.

Fantastic Finds, the First One ... and Related Tales contributors:

No. 420—Jeff Jewett and Danny Evans; No. 421—Barbara and Chuck Christensen and Patrick DeSantis; No. 422—Steve Gossard, Doug Cummings, and Jeff Jewett; No. 423—Paul Henion, Mike McNamee, and Steve Parsons; and No. 424—Greg Hart, Susan Forman, and Ken Hogwood.

In Memoriam contributors:

No. 419—Fred Ingram "Gene L. Bagwell", Larry Chelmow "David Deutermann", Fred Ringer "John Fletcher", and Bob Stoll "William 'Bill' Kapp"; No. 420—Marion Krajewski "William F. Keller" and Ken Hogwood "Jeffrey Carl 'Jeff' Jacobus"; No. 421—John E. Bartos "Alice Faye [Stainbrook] Dankert"; No. 422—Ken Hogwood "William R. 'Bill' Smith" and Thomas J. Bartels "George Brusky"; No. 423—Don and Karen Barrett "Otto Raymond Odermott III" and Joanne S. Orr "Richard 'Dick' L. Michael"; and No. 424—Steve Lobel "Roger Alexander".

Poem contributors: No. 422 Penny Clauss "Ode to the and Tower Clock"; and No. 423 Lisa Ferris-Terzich "The Clock".

Vox Temporis contributors: No. 419—Mark McKinley, Burt Cifrutlak, Rob Ross Hendrickson, Arthur W. J. G. Ord-Hume, Cyrus Wind Dancer, and Donna Niere; No. 420—Chris H. Bailey, Peter Gosnell, and Mark Frank; No. 421—William Pullen, Richard Perlman, and Randy Jaye; No. 422—Pam Lindenberger, Maryhelen Jones, Mike Bailey, Adam Harris, Randy Jaye, Alan Shapiro, Suzanne Charlebois, Bob Frishman, Julia Blair, and Joe Cohen; No. 423—Bob Frishman, Jerry Maltz, Price Russ, Jeff McGuire, Robert Linkenhoker on behalf of Dennis Sagvold, John H. Perschbacher, Andrew H. Dervan, Michael Edidin, and Philip Priestley; and No. 424—Bob Frishman, David Read, Edward A. Britton, and Chris H. Bailey.

Call for Nominations

Appointed Members—NAWCC Board of Directors

This is a call for nominations for the appointed positions to the NAWCC Board of Directors to be filled in the spring of 2017. The term begins in June 2017.

Two Director positions will be filled. Both are four-year terms.

Director appointment is the way in which individuals with specific experience and proven skills may be placed in service on the Board to fill needs. Special qualifications may include financial planning, legal counsel, museum management, fundraising and development, and organizational leadership.

Those interested in serving as an appointed member may self-nominate or be nominated by another NAWCC member.

To obtain a nomination form, you may:

- Visit the nawcc.org home page and click on the Member tab. From there, go to Members Area, scroll to NAWCC Member Documents, and click on Nomination Form for Elected and Appointed Positions
- Contact Pam Lindenger of Member Services at

717.684.8261, ext. 210, or plindenger@nawcc.org

- Check the May/June 2016 issue of the *Mart & Highlights*.

Completed nomination forms should be submitted as soon as possible or no later than April 3, 2017. They can be mailed to NAWCC, Inc., Steve Humphrey, 514 Poplar St., Columbia, PA 17512-2130; emailed to shumphrey@nawcc.org; or faxed to 717.684.0878.

It is a vitally important responsibility to serve on the NAWCC Board of Directors. This is your Association, and your help is needed to lead it. If you have the talent and will seriously commit to accepting this challenge, we want to hear from you.

If you want to discuss your nomination, please contact Nominating and Elections Committee Chair Ruth Overton at rwoverton@att.net or by calling 417.358.5861 or NAWCC Executive Director Steve Humphrey at shumphrey@nawcc.org by calling or 717.684.8261, ext. 209.

Respectfully,
Nominating and Elections Committee

Eligibility Requirements for Candidates

NAWCC Board of Directors

- Member in good standing and not employed by the NAWCC.
- No felony convictions or Board sanctions relating to ethics violations.
- Understanding that a Director position may include committee and officer duties.
- Agreement to interview with the NEC to verify eligibility and confirm goals consistent with the mission of the NAWCC.
- Agreement to the Board Code of Ethical Conduct found on nawcc.org under the Member tab on the home page. After clicking on Members Area, go to Member Documents and then to BOD Documents.
- Knowledge of and agreement to common law and statutory fiduciary responsibilities of nonprofit Board members.
- Availability of time to participate in Board discussions via email and monthly electronic or conference call Board meetings.
- Interest and desire to participate in developing and monitoring strategic plans and objectives.
- Willingness to help write guidance documents for committees.
- Development of a productive relationship with the Executive Director and contribution to annual performance reviews.
- Agreement to special training in nonprofit corporation Board responsibilities, if deemed necessary.
- Willingness to establish and monitor fiscal policies and raise funds through appeal letters or by seeking donations.
- At least eight days away from home annually, to attend two physical Board meetings and serve as a National representative for Regional meetings (travel and lodging expenses reimbursed).
- Capability to use computers with Microsoft Office or compatible software, with Internet access and email.
- Former members of the Board or Council, or a former Museum Trustee may serve if at least one term (four years) has passed since last service.

Appointment Process

The Nominating and Elections Committee will interview candidates to confirm their interest and eligibility under the requirements.

By mid-April, the NEC will select from among all candidates the two who are best qualified to serve and present them to the Board of Directors for appointment.

If the Board does not approve either of them for appointment, then the NEC will present additional candidates, one at a time, until the two positions are filled.

FOR ALL TIME

75th Anniversary Endowment and Capital Campaign Donors

Planned Gifts

Total gifts \$1,575,000

Ken C. and Beauton Hogwood †
John G. Kirk †
William H. Miller †
Steven L. Overstreet †
Ruth and Hugh C. Overton Jr. †

Gifts and Pledges

\$250,000 +

Crystal Trust

\$100,000 - \$249,999

Robert and Susan Gary
George and Cathy Goolsby

\$50,000 - \$99,999

Philip C. and Carol M. Gregory
Estate of Mary Louise Moore †

\$25,000 - \$49,999

Anonymous
Estate of Betty Deroski †
Chet and Kathy Ekstrand
Mary Ann Wahlner †

\$10,000 - \$24,999

Dudley and Yolanda Cline Trust †
Donegal Mutual Insurance Co.
Roger J. Gendron
John G. Kirk †
Eric T. Lincke
Janet and Russ Oechsle
Ruth and Hugh C. Overton Jr. †
Jerry and Linda Thornsberry

\$5,000 - \$9,999

Chuck and Cindy Campbell
Estate of George T. Copes †
Marshall Damerell
Frank A. and Joanne Del Greco
James and Pat Holloway
Estate of Ursula Metsker †
Fortunat Mueller-Maerki
George E. and Joanne S. Orr
Paul D. Phillips
Carroll W. and Anna Beth Wolfe

\$1,000 - \$4,999

Tom and Donna Bartels
Charles W. and Teresa C. Buttz
Joyce Pate Capper
Michael Dempsey
Andrew and Linda I. Dervan
David W. and Louisa E. Dunn
David A. Follett
Harry W. Firth
Gregory D. Gould
Ken C. and Beauton Hogwood †
John and Beth Hubby
J. Steve and Sandy Humphrey
Jake Kelley
Julie and Dave Kern
Ethan Lipsig
Thomas and Jane McIntyre
M. J. Mintz
Tim Orr
Fred and Pam Tischler
Eugene and Barbara Volk

\$100 - \$999

Anonymous (3)
Leroy E. Baker
Mrs. Reed W. Bender
Gordon Bethune
James Cipra
Betty B. Crouse
Judy Draucker
John S. Kloss
Marion and Bill Krajewski
Lancaster County
Community Foundation
David A. Lee
Richard Newman
Lu and Steve Sadowski
Hugh R. and Evelyn Slough
Bertram B. Townsend

Chapters & Regionals

Atlanta Chapter 24
Buckeye Chapter 23
Cog Counters Chapter 194
Heart of America Chapter 36
NAWCC Florida Regional
Old Timers Fellows Chapter 22
Rio Grande Chapter 117
San Jacinto Chapter 139

† denotes a 1943 Heritage Society member

* includes a matching gift

This list is current as of September 22, 2016.

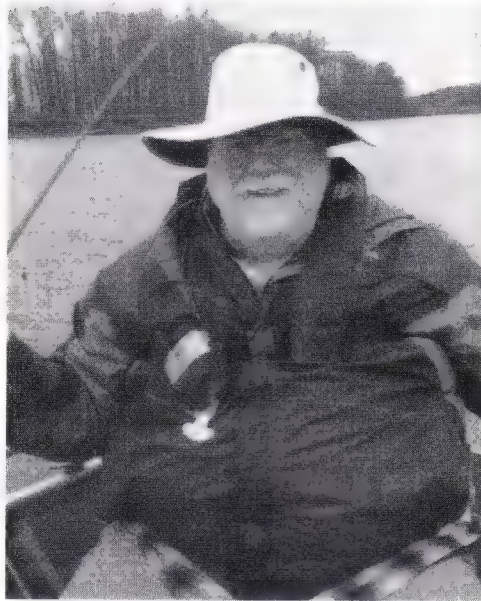
In Memoriam Roger Alexander (1946-2016)

Former clock repair class instructor and longtime Chapter 31 member Roger Alexander died June 24, 2016. He was a mainstay of instruction for more than two decades—first as a student earning a state-issued certificate, then as mentor to countless students, and finally instructor.

Declining health forced him to end his formal class involvement. Roger continued to invite former students to his home to “play with clocks.” He was part inventor, part machinist ready to take on the most complicated repair. Cuckoo clocks were his specialty, but he was interested in all things mechanical.

Born April 30, 1946, and raised in Weirton, WV, his family moved to Spokane, WA, in 1963 for his senior year of high school. Shortly after graduation another move brought him to Portland, OR.

After a short stint working in a plywood mill, Roger joined the US Army in 1966. Enlistment sent him to Fort Polk, LA, for basic training then to Aberdeen Proving Grounds in Aberdeen, MD, for advanced training, and eventually to Fort Riley, KS, where he was stationed. In late 1967 he was deployed to Vietnam, Can Tho Army Airfield in the Mekong Delta. He was assigned to



an engineering battalion as a machinist. The airfield was virtually destroyed during the 1968 Tet Offensive. The company sustained heavy losses, but he extended his return date so he could serve in Vietnam with his brother. He was honorably discharged in 1969 as a specialist fifth class.

He graduated from Oregon Institute of Technology with a degree in electronic technology. Upon graduation he went to work for Tek Electric Control, Inc., in Portland, OR, where he remained until retirement.

Roger was an avid hunter and fisherman. When not working on clocks or enjoying the outdoors, he could be found in the kitchen preparing gourmet delights. He is survived by his wife Lynne of 45 years, daughter Michele, son Jay, daughter-in-law Crystal, brother Gene Alexander, sisters Joyce Sykora and Mary Newman, and seven grandchildren.

Roger never missed an opportunity to “hold court,” spinning a good tale. He was a guy with the verve for conversation. No matter what was going on in your life or his, time spent with Roger would lighten your load.

—Steve Lobel (OR)

Obituaries

Hon. Paul K. Allison
68395, Lancaster, PA

Seth Glanville Atwood
15465, Rockford, IL

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Earl Harlament given by D. Cowen and P. Moore

UNITED STATES POSTAL SERVICE® (All Periodicals Publications Except Requester Publications)

1 Publication Title: Watch & Clock Bulletin

2 Publication Number: 2 1 5 2 - 4 8 5 9

3 Filing Date: September 28, 2016

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6 Annual Subscription Price: \$90

7 Complete Mailing Address of Known Office of Publication (Not printer) (Street, city, county, state, and ZIP+4®): National Association of Watch and Clock Collectors, Inc. 514 Poplar St., Columbia, Lancaster County, PA 17512-2130

8 Complete Mailing Address of Headquarters or General Business Office of Publisher (Not printer): National Association of Watch and Clock Collectors, Inc. 514 Poplar St., Columbia, Lancaster County, PA 17512-2130

9 Full Names and Complete Mailing Addresses of Publisher, Editor, and Managing Editor (Do not leave blank):
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 Editor (Name and complete mailing address): Therese Umerlik 514 Poplar St., Columbia, Lancaster County, PA 17512-2130
 Managing Editor (Name and complete mailing address): Therese Umerlik 514 Poplar St., Columbia, Lancaster County, PA 17512-2130

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g. Copies not Distributed (See Instructions to Publishers #4 (page #3))		501	306
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18 Signature and Title of Editor, Publisher, Business Manager, or Owner: Therese Umerlik, Editor, 9/28/16

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 Signature: *Therese Umerik* Editor Date: 9/28/16

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Access information about Regionals, the Convention, and the Symposium from the nawcc.org homepage.
All regional meetings must be scheduled through Convention Committee Coordinator John Koepke,
NAWCC, Inc., 514 Poplar St., Columbia, PA 17512-2130 • 717.684.8261 • jskoepke@comcast.net
This listing includes only Regionals that have been confirmed as of September 23, 2016.

2017 National Convention | June 28-July 1
Arlington Convention Center and Sheraton Arlington,
Arlington, TX
Host: Lone Star Ch. 124

2017 Ward Francillon Time Symposium | October 26-28
Boston Museum of Fine Arts, Boston, MA
Host: Chapter 8

NOVEMBER 2016

November 4-6—Mid-Eastern*

Host: Philadelphia Ch. 1.
Cohosts: Maryland Ch. 11; Washington DC Ch. 12;
Carolina Ch. 17; Shenandoah Valley of VA Ch. 32.
National Rep: Philip Gregory
York Expo Center, York, PA.

November 12-13—Southern

Host: Creole Ch. 43.
Cohosts: Magnolia Ch. 41; Queen City Timekeepers Ch. 167;
Big Bend Timekeepers Ch. 176.
Best Western Landmark Hotel, Metairie, LA.

JANUARY 2017

January 20-21—Kentucky Thoroughbred

Host: Kentucky Thoroughbreds Ch. 140.
Cohost: Kentucky Bluegrass Ch. 35.
Clarion Hotel Lexington, Lexington, KY.

FEBRUARY 2017

February 10-11—Florida Mid-Winter*

Host: Daytona Beach Ch. 154.
Cohost: Palm Beaches of Florida Ch. 99.
Lakeland Center and Hyatt Place Lakeland Center,
Lakeland, FL.

MARCH 2017

March 24-25—Arizona Sunshine*

Host: Valley of the Sun Ch. 112.
Cohost: Keywinders of Arizona Ch. 46;
Southern Arizona Ch. 113.
Fountain Hills Community Center and Lexington Hotel &
Suites, Fountain Hills, AZ.

March 31-April 1—River Cities*

Host: Heart of America Ch. 36.
Cohost: Great Plains Ch. 58.
Lenexa Community Center and Crowne Plaza Hotel,
Lenexa, KS.

APRIL 2017

April 6-8—Southern Ohio

Host: Buckeye Ch. 23.
Cohost: British Horology Ch. 159.
Roberts Centre and Holiday Inn, Wilmington, OH.

MAY 2017

May 19-21—Pacific Northwest*

Host: Pacific Northwest Ch. 31.
Cohosts: Puget Sound Ch. 50; Inland Empire Ch. 53;
British Columbia Ch. 121; Mt. Rainier Ch. 135.
Monarch Hotel and Convention Center, Clackamas, OR.

JUNE 2017

June 2-3—Greater St. Louis Regional

Host: St. Louis, MO Ch. 14.
Cohosts: Electrical Horology Society Ch. 78.
Moolah Shriners, St. Louis, MO

AUGUST 2017

August 4-5—Eastern States*

Host: Central New York Ch. 55.
Cohost: Western New York Ch. 13; Toronto Ch. 33.
Holiday Inn Convention Center and Holiday Inn,
Liverpool, NY.

SEPTEMBER 2017

September 21-23—MKOA

Host: Ozark Ch. 57.
Cohost: Sunflower Clock Watchers Ch. 63;
Sooner Time Collectors Ch. 74.
Carthage Memorial Hall, Carthage, MO

September 29-30—Mid-America

Host: George E. Lee-Michiana Ch. 26.
Cohost: Indiana Ch. 18.
World War II Victory Museum/Kruse Hall
and Quality Inn, Auburn IN.

NOVEMBER 2017

November 11-12—Southern

Host: Creole Ch. 43.
Cohosts: Magnolia Ch. 41; Queen City Timekeepers Ch. 167;
Big Bend Timekeepers Ch. 176.
Best Western Landmark Hotel, Metairie, LA.

MARCH 2018

March 2-3—Lone Star

Host: Lone Star Ch. 124
Cohosts: Southwestern Ch. 15; Five State Collectors Ch. 80;
San Jacinto Ch. 139
Mesquite Convention Center and Hampton Inn & Suites,
Mesquite, TX

APRIL 2018

April 12-14—Southern Ohio

Host: Buckeye Ch. 23
Cohost: British Horology Ch. 159
Roberts Centre and Holiday Inn, Wilmington, OH

AUGUST 2018

August 3-4—Eastern States*

Host: Central New York Ch. 55
Cohosts: Western New York Ch. 13; Toronto Ch. 33
Holiday Convention Center, Liverpool, OH

*Public day offered.



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